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ABSTRACT

Presented in this document are the conference papers on Reform and Planning of Higher Education, held in Oxford, England, March 31-April 5, 1974. This symposium was centered on the British experience and the present state of thinking in the United Kingdom, and includes fifteen papers read by British lecturers and five by non-British lecturers that summarized similar or contrasting experience in other European countries. Underlying all contributions to the Symposium was the conviction that after the golden age of well-financed expansion in the 1960s higher education is likely to go through much leaner times in the present decade. The constraints of this new situation will in all countries make it necessary for planning to become more efficient and for reform to seek a broader consesus on the central issues. The papers are divided into three sections: the British Experience, the Challenge of the New Media, and Planning for Efficiency. The final report concerns the Carnegie reports and their relevance to higher education in Europe. (Author/PG)

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Second Part

REFORM AND PLANNING OF HIGHER EDUCATION

Symposium at Oxford, 31st March - 5th April 1974

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The Oxford Symposium was one of the most interesting organised in recent years under the auspices of the Council of Europe by national authorities. It was centered on British experience and the present state of thinking in the United Kingdom, fifteen papers being read by British lecturers and five by non-British lecturers which summarised similar or contrasting experience in other European countries. Underlying all contributions to the Symposium was the conviction that after the golden age of well-financed expansion in the 1960s higher education was likely to live through much leaner times in the present decade. The constraints of this new situation will in all countries make it necessary for planning to become more efficient and for reform to seek a broader consensus on the central issues.

Participants from outside the United Kingdom were most interested in questions such as the following: How have the British managed to establish the balance between university autonomy and state finance by quinquennial grants, thus avoiding the controversies which embitter higher education policies in the rest of Europe? How have they succeeded in maintaining the balance between higher and further education, the universities, the polytechnics and the colleges, thus avoiding the tragic deadlock of numerus clausus? What is the impact of recent innovations like the Diploma of Higher Education and the Open University? In short, what can we learn from the British experience and how far is present thinking on reform and planning in the United Kingdom relevant to developments in continental and nordic Europe?

Information Bulletin *wishing to contribute to the documentary material relevant to such questions, we reproduce below a selection of the papers read at the Symposium. We regret that lack of space does not permit us to reproduce all contributions.*

Opening address: Recurrency and reform in higher education

by W. TAYLOR, Director,
Institute of Education, University of London.

Over the past ten years most meetings of experts in higher education have been marked — and sometimes marred — by a concern with the causes, characteristics and consequences of growth. Growth in student populations, in the number and variety of institutions, in degrees and diplomas awarded, in the range of subjects studied. Now in several of our countries we are seeing a halt in this growth, and even a down turn inactivity. It matters a great deal whether this is merely a short-term fluctuation, or heralds a long-term trend. There are few present indications that a disastrous slump is immediately about to occur, with massive cutbacks in staff, facilities, and the resources available for new

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developments. Annual increments of growth over the past ten years have been similarly inconspicuous. But small differences are cumulatively significant. And more than this, for marginal changes can exercise a profound influence on attitudes and values. The world, and our existence within it, is poised upon small variations; a change of a degree or two either way in the temperature of various zones could spell climatic disaster; homeostatic controls determine that our bodily temperatures remain adjusted within very fine limits. If the mechanisms break down, and we transgress the limits for extended periods, we die.

In social and educational affairs, quite small changes, especially when out of line with a well established trend, can have serious effects on morale and on attitudes. To some extent this is due to the speed with which facts and ideas can today become the subject of printed speculation. The two years that elapse between beginning work on a book and seeing it published inevitably smooth the curve. Unkind though the thought may be, the need to fill the weekly columns of the educational journals and the mouths of educational journalists' offspring may tend to emphasise the ephemeral, the sensational, and the short-term fluctuation.

Part of the anxiety caused by the current down turn is due also to our having grown accustomed to living with expansion. Increments of growth can be devoted to new purposes without the need to disturb any existing arrangements, and without depriving existing incumbents of what they currently receive. Any suggestion that the growth trend might be reversed also plays into the hands of those apocalyptically minded romantics who abound in universities, who react to the waters rising about them by throwing up their arms and sinking all the quicker. My own inclination is first, not to assume the water will go on rising, certainly not at an even rate, and second, at least to make an attempt to swim. It will be a great mistake to assume because of the apparent slowing down in demand for and in the rate of growth of post-secondary education that characterises 1974, we should stop trying to work out where we are going and how we intend to get there, or that we should now plan for a stable or diminishing educational enterprise. Given the low percentages of population who have experienced higher education in most of our countries, all the long-term needs argue otherwise.

Thinking about reform: basic assumptions

In thinking about the need for a long-term strategy we should begin with the assumption that in a pluralist society there is unlikely to be a central locus of control by means of which major changes in *all* the areas that require "reform" — the organisation of knowledge, institutional structures, recruitment and conditions of service of staff, access by students to post-compulsory secondary education, the range and type of awards to be offered — can be initiated with hope of a favourable outcome. Instead, it has to be recognised that each system and sub-system possesses a substantial measure of autonomy, and efforts have to be directed towards identifying, nurturing and if necessary creating appropriate self-regulatory mechanisms which facilitate sensitivity to the direction of policy without demanding central monitoring and control.

Reforms also need to be based upon the evaluation of *process* as well as of structures. It is easy, for example, to argue that if we improve the quality of student intakes (questions as to what "quality" in this sense really means are seldom tackled) the quality of teachers and the quality of facilities, we shall get some kind of improvement. But is this necessarily so? As well as looking at the inputs we need also to examine processes — quality of teaching, quality of learning, and effective resource usage in relationship to purpose.

Only certain aspects of a social and institutional system as complex as higher education are amenable to direct intervention. A large proportion of what might be considered as necessary reforms can only be carried out when the climate of norms and expectations that govern individual and institutional behaviour has been modified. This is necessarily a long and uncertain process. The skill comes in separating out those reforms that can and should be brought about by legislation and resource distribution from those, however desirable, that can only follow changes in the climate of ideas.

The key dimensions

The process of formulating objectives, identifying aspects of provision that require and are amenable to reform, and devising strategies of intervention, needs to take place in relation to a number of key dimensions of higher education provision. These include scale, access, control, range, distribution, hierarchy, image, and the evolution of an appropriate language of analysis.

Scale

The importance of *scale* is self-evident. It relates both to the overall number of places that are pro-

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vided, and to the size of individual institutions. On the first, most countries follow some kind of social or private demand principles, as enunciated by the Robbins Committee in England and the Ottosen Committee in Norway. But discussions of demand beg a large number of questions. S. M. Miller (1) has argued that a reformulated Say's law suggests that useful supply produces its own demand, and good services create demands that are in practice very difficult to meet. Demand is by no means a passive variable. It can be both stimulated and inhibited by differing social conditions, e.g. plenty of job opportunities for graduates as compared with unemployment, as well as by specific interventions. Miller also suggests an interesting approach to the question of take-up which distinguishes back-log demand, derived demand and awakened demand. It would probably be fair to say that the Open University in England is still responding to back-log demand, which arises from the existence of substantial numbers of potential students who have been, as it were, just waiting for such an opportunity. Derived demand arises from changes in the occupational structure, from technological advances which give rise to new forms of employment, from changed expectations of business and government concerning threshold qualifications for particular levels of work (which themselves reflect some measure of educational inflation). Awakened demand "largely arises from the efforts of programmes to stoke up interest from groups who are not readily committed to education".

Another aspect of the problem of scale relates to the size of individual institutions — colleges, research institutes, universities, and so on. A good deal has been said in the past about economies of scale, often crudely interpreted as meaning the bigger the better. But as in other areas of cost calculations, it has been all too easy only to count in those elements that are measurable, and to ignore the many social and moral diseconomies that arise from growth beyond a certain size. One sorely needed reform is to cost in a wider range of variables to economy of scale calculations.

Access

I have recently written a good deal elsewhere on the subject of *access*, and will not attempt to enlarge much upon it in the present context (2). It is often alleged that reforms are needed to improve opportunity, but much less is done to analyse what constitutes opportunity in the context of higher education. Some hard-headed authors, taking differential reward and status structures consequent upon the division of labour as given, reckon opportunity in terms of the number of those in specified social groups who achieve particular levels of qualifications and employment. On this basis it is theoretically fairly straightforward to assess the extent to which a particular reform strategy has helped to enhance opportunity. Putting it at its simplest, to what extent do those who participate in programmes of non-traditional higher education compete successfully with others who have pursued more traditional patterns of study?

It is possible to answer these questions at more than one level. For example, graduates of the Open University, who are below retiring age, have the same right as any other kind of graduate to seek professional training as a teacher. The extent to which Open University graduates obtain such training, are successful in it, and then go on to achieve promotion and advancement within teaching itself, are empirical questions to which we may ultimately have some useful answers, but in respect to which today only conjecture is possible.

But some authors, more romantic and reformist in orientation, but possibly as close to future realities as their harder-headed counterparts, take the view that a properly executed policy of reform would help to achieve a virtually total reconstruction of our familiar patterns of status and reward, and would enable much greater emphasis to be placed on the social as distinct from economic and occupational competencies of individuals. This may be a legitimate aspiration, and it could well be that the conscious and energetic adoption of a radical reform strategy coupled with a wide range of other fiscal and welfare measures might in the longer run have just this effect. But pro tem such an approach does tend to remove most of the analytical usefulness of a concept such as equality of opportunity.

The social demand approach, to which I have already referred, suggests that equality of opportunity requires that all those who are capable of benefiting from post-secondary education must

(1) Miller, S. M.: *Demand for recurrent education*, paper presented to the Recurrent Education Conference, Georgetown University, March 1973. Paris, Centre for Educational Research and Innovation (CERI) RE/73.04 (Mimeo).

(2) Taylor, W.: "Accessibility to post-secondary education" in OECD, Report on the Conference on Future Structures of Post Secondary Education, Paris, OECD, 1974.

have the opportunity to qualify themselves for entry to appropriate courses, and that access be not denied on the basis of criteria such as race, colour, poverty, social class, regional origin or religion, all of which are regarded as being "irrelevant". I need hardly underline the difficulty of defining those who are "capable of benefiting" from post-secondary education, in determining what might be called "appropriate" courses, and in obtaining agreement to what are relevant criteria and what are not. Many discussions on higher education seem to define post-secondary education so broadly, to take in all the forms of post-school, general and vocational education and training that, given adequate finance and facilities educational institutions are capable of providing, that it seems that the whole population can be regarded as capable of benefiting. On a "value-added" basis this is no doubt true, but if we adopt a narrower definition, to include only those kinds of study traditionally associated with courses provided in universities or institutions of comparable standing, the proportion of the population likely to be involved is much smaller, although in excess of the numbers currently receiving education at this level in most developed countries.

Any systematic discussion of questions of this kind requires careful consideration to be given to the interaction of variables such as measured intelligence, home environment and school experience, each of which has to be broken down into further clusters of related factors. Whilst the attention psychologists and sociologists have given to such questions in recent years has provided useful clarification and has shown the inadequacy of many common assertions, it has also indicated how far we are from a really satisfactory understanding of the nature of educability, how it is distributed among the population, and how it changes over time in response to environment and educational influences.

Control

Questions of *control* also seem to me to be of central importance to any strategy of reform. They raise issues about the autonomy of institutions, the extent to which bureaucratisation consequent upon growth and diversification erodes the collegiality hitherto characteristic of many academic institutions, and the effects of this on structures of knowledge and learning. They also highlight the contemporary popularity of the notion of accountability, a notion that has been carried to the point of absurdity in some North American universities now committed to policies of performance-based teacher education.

Range of studies

On the possible *range of studies* that must be accorded recognition in institutions of higher education there is much that could be said. I have already touched upon questions of *distribution*, which include decisions about, for example, centres of excellence in particular fields. Discussions of the extent to which *hierarchical* patterns of status and reward within higher education are amenable to reform are frequently afflicted by a vague inspirationalism that gets in the way of clear thought. Martin Trow has drawn attention to the difficulties that arise from a tendency to define all differences as inequalities. We could usefully spend many hours in teasing out some of the political, social and moral issues that this tendency implies.

Image and language of analysis

Finally, there are problems relating to the *image* of higher education and to the language of analysis that we use to describe and to discuss what we all do in our colleges, universities, research institutes, ministries and so on. Mention of images brings us full circle to the points that I made at the beginning of this paper about the effect of small changes on attitudes and morale. My own conviction is that the image of higher education has suffered a great deal in most developed countries in recent years, and this is only partly to do with the actions of student militants and irresponsible academics. In part it is a matter of society having to unlearn a set of stereotyped expectations characteristic of a system of higher education significantly different in concept and purpose from that which is now evolving. To use Trow's terms again, we are suffering from the application of stereotypes derived from a period of elite higher education, at a time when our practice is moving closer to a mass system. I would also argue that, for a variety of reasons the *language of analysis* used to consider higher education has been weakened. To substitute the myth of the millennium for the myth of the golden age, as in so many contemporary "radical" statements, represents no very useful kind of progress.

The problem of recurrent education

Of all the long-term reform strategies for higher education that have been provided in recent years, that of *recurrent education* is the most comprehensive and all-embracing. It is to this notion that I want to devote the second part of my paper.

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Definition

Although there are always rival claimants for the introduction of new educational terms, I had not previously seen the words "recurrent education" used prior to a speech by the former Swedish Minister of Education Mr. Olaf Palme at the VIth Conference of European Ministers of Education at Versailles in May 1969. At first blush, what Palme had to say seemed little different from what apologists for technological change had been saying for a long time, namely that the application of science to technology, and consequent changes in the structure of the work force and in the nature of the tasks undertaken in industry and commerce required much more systematic attention to be given to a variety of forms of in-service education. In teacher education, this notion has been part of the conventional wisdom for a very long time. But there was more to it than that, as soon became clear.

Recurrent education has since been distinguished from apparently similar terms such as permanent education, lifelong education, adult education, in-service education, lifelong entitlement and post-work education by the attention that it pays to the *distribution* of education over the life-span of the individual, i. e. its alternation with other activities, principally with work, but also leisure and retirement. Recurrent education has been offered as an *alternative* to the straight line growth characteristic of developments in higher education in many countries over the past 10 years. Some people have got very steamed up about the threat that this appears to pose to existing institutions and its political unreality. The OECD "Clarifying Report" (3) on recurrent education, on which I shall draw heavily in the paragraphs that follow, does indeed contain much that is merely rhetorical. But beyond the rhetoric and the attempt to offer an apparently cheaper way of satisfying demand that is both radical and likely to appeal to conservatively minded administrations, the report does make an effort to grapple with some real and urgent problems. What it has to say deserves close attention, not least at a time when despite a falling off in demand for university and college places from school leavers, the "non-traditional" Open University has a record number of applicants.

Motives

The motives that have inspired academics, government agencies and international organisations to elaborate the principle of recurrency are diverse. The fact that international bodies have been very active in the promulgation of the ideas is itself significant. Such bodies are continuously in the position of having to ensure that administrators and academics from different countries can agree to whatever policy statements and recommendations are presented for their approval, and some effort has to be made to say things applicable to a great diversity of structural arrangements and economic situations. I suspect also that there is a built-in tension between, on the one hand, the reformism and radicalism of many of the international civil servants who man these agencies and the academic experts who attend their gatherings, and, on the other hand, the conservatism of many of the member governments that provide their sustenance. Here again, there is a press towards formulations that embody demands for change, yet imply no very specific recommendations concerning the improvement of existing arrangements in any one country. It does not take long to become aware of how the performance imperatives generated by these international gatherings differ from those typical of conferences and meetings of specialists in a particular discipline, or where the concern is with policy making that is the province of a recognisable decision-making body. But international assent is not the only factor that has stimulated advocacy of the principle of recurrency. The notion of recurrent education also drew strength from the anxieties that many countries had at the end of the sixties about the pressure of demand for university and other post-secondary education, which threatened to swamp both existing facilities and total budgetary allocations for all levels of educational provision. At first sight, it seemed that by diversifying the demand from 18-year olds into various kinds of short cycle post-secondary education, such as our Dip. H. E., and by deferring the need to make provision until a later stage of an individual's career, some of the pressure on places and resources could be alleviated.

Another motive was the anxiety created in some countries by the arguments, antics and articulateness of student minorities. Despite the romantic images of what happened in Paris in May 1968, no European government has yet been toppled by student action. But there has certainly been a good deal of anxiety on the part of parliamentarians and administrators. On the simple maxim that hard working students are probably well behaved, and ignoring the fact that it is the ablest members of many student groups who can often be found closest to the barricades, policy makers have strenuously advocated the cause of the adult student, hopefully amenable, full of well directed

(3) OECD: *Clarifying report on recurrent education.* Paris, CERI, 1972.

effort, and more sympathetic to problems of institutional management than his 18-year old counterpart.

We must also reckon with the fact that international dialogue on so diffuse a subject as higher education is facilitated by the use of some overarching concept that offers a meaningful articulation of the diverse educational situations and policies of different member countries.

But it would be a mistake to ignore the issues of substance that are often so effectively disguised by the thick rhetorical cloud that characterises their discussion. Clearly motives of the kind that I have described have played a part in the advocacy of recurrent education, but they do not in themselves discredit it.

Recurrent education in principle and practice

In assessing what is rhetorical and what is revolutionary in the notion of recurrent education we must do two things:

— we have to examine the *principles* that are supposed to characterise the long-term strategy to which I have referred, and in particular, to test their motivation;

— we have to appraise the realism of the *claims* that are made on behalf of such a strategy, and assess the consequences that would follow from attempts at its implementation.

The OECD's *Clarifying Report* on recurrent education argues that eight basic principles should guide the elaboration of its main features, irrespective of particular national settings.

First, upper secondary schooling should be of a kind that gives the individual pupil a choice between immediate entry to the labour force, entry to another educational institution as a fulltime student, or deferred post-compulsory education.

Clearly, this condition is fulfilled in few countries at the present time. Accumulative evidence from a now substantial number of studies suggests that the important choices are taken much earlier in an individual's educational career. Although he may be able to speed up or slow down his progress by individual effort, the educational escalator to which he is allocated by birth, early childhood experiences, and the progress made in the first stages of formal education, inevitably provide much of the necessary momentum and in many cases determine the ultimate destination. It is clear that more has to be done to understand earlier stages of the educational career if this particular principle of recurrent education is to be satisfied.

Second, it is argued that access to post-compulsory education should be *guaranteed* at any time after leaving compulsory schooling.

This begs a lot of questions. If it is to mean anything, it requires the existence of adequate systems of grants and student support to enable mature individuals to "contract back in" to the educational system. Again, there are very few countries in which these yet exist. Paid educational leave has been introduced in a few countries for certain grades of workers, and we now have the proposal in the United Kingdom that teachers should have the right to the equivalent of a term off for further study and training every 5 or 7 years. The notion is spreading but the costs are high, and this is not a good time for broaching the subject of increased expenditure.

Third, facilities for education need to be distributed in such a way as to make them available to odd individuals, wherever and whenever needed.

This has a strong rhetorical element about it, but it is not irrelevant to, for example, recent government efforts in the UK to ensure a more even country-wide spread of higher education facilities. This inevitably means more home based students, and satisfies the press towards economy that is never far from the surface of any educational pronouncement by central government. Many other European countries have also made fairly considerable efforts to spread educational provision more evenly, especially in respect of their less culturally and climatically hospitable regions.

The *fourth* principle is that "work and other social experience should be regarded as a basic element in admission rules and curricula design."

If this means that courses of recurrent education should be geared to the age and experience of those who are pursuing them, it is unexceptionable, if difficult to implement. If it goes further and suggests, as in the case of some American institutions today, that some form of credit should be given for periods of work that have no academic content, then I do not find it convincing.

The *fifth* principle, which has perhaps the widest implications of all, is that it should be possible to

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pursue a career in a way that permits a regular alternation between study and work.

In this case, as in respect of a number of other principles and claims associated with recurrent education, it is unclear as to *who* is going to make it "possible and important" to pursue a career in this way. One can understand employers making time available for employees to update their skills and to train for alternative types of work within the same concerns. But not all "careers" benefit from arrangements of this kind, and it often seems to be implied that the alternation must essentially be with *full-time* periods of study.

The *sixth* principle is one which again has important implications, for it suggests that the organisation and content of recurrent education should be designed in co-operation with various interest groups that are involved, including students and the "customers" in the shape of government agencies, local authorities, and industrial concerns, as well as the academic institutions that provide the necessary courses.

The motivations that underly this desire are various. They include the notion that an institution preparing individuals for a particular occupation or profession should in some way be accountable to existing practitioners or to the system in which they operate. They reflect the desire to democratise higher education, but also to place limits upon what is seen by some critics as the monopolistic power of the educators. To some of its advocates, this principle suggests a way in which theory and practice in any particular field might be brought close together.

The *seventh* principle speaks out against the dangers of credentialism, and argues that degrees and certificates have to be looked upon merely as steps and guides within a process of life-long educational and personal development.

Again, as a general aspiration this is difficult to fault. It is the implications of such a continuous process that are important. Does it suggest, for example, that every individual should have some kind of educational record that accompanies him throughout life? Personally I hope not. If it means anything, a reformed higher education should mean the opportunity for many fresh starts.

What this principle certainly *does* imply is the availability of improved forms of information and guidance for school leavers and adults alike. Without these it seems all too likely that the chief beneficiaries of recurrent education will be those who have already done well from the existing system. But as we are all very much aware, information and guidance is heavily dependent upon assumptions about the benefits that additional education will provide, and about the nature of individual educability. Indeed, the evidence suggests that when the means of providing information and guidance are strongly institutionalised, they can all too readily become a selecting and sorting mechanism that if different in *intent*, is little different in *effect* from the more easily observed and more easily criticised processes characteristic of a selective system. It is clear that a great deal depends on the structures in relation to which information and guidance are exercised and the social and psychological assumptions on which they are based.

Finally, it is stated that each individual should be given a legal right to periods of educational leave of absence without risking the loss of employment or his social security status. I believe that such a legal right has been written into the legislation on paid educational leave in some of our member countries, and it is being argued for elsewhere, as adjunct to or as part of the social security provisions. But here as in relation to some of the earlier principles, the emphasis seems to be upon *full-time* study as providing the alternation between education and work. (It is also interesting to speculate as to whether the *legal right* to periods of study also implies some kind of *obligation* to study on the part of the worker or professional. So far I have not encountered a source in which this intriguing question is pursued.)

It is argued that if an alternative educational strategy based on these principles was adopted, the effect would be first, to improve educational opportunity, second to provide the individual with the "fundamental right to decide his own future", third, to enhance motivation for learning, fourth, to facilitate the adaptation of the labour force to new technological demands, fifth, to give meaning and status to short cycle studies and avoid the contrast between "noble" and "less-noble" institutions, sixth, to encourage and permit a more widespread and effective use of new educational media, and finally to furnish an alternative strategy that can integrate and lend significance to our present piecemeal efforts to reform post-compulsory provision.

Pragmatism v. "globalism": the need for caution

There is a breathtaking sweep about some of these claims that tends to estrange the pragmatic Eng-

lishman, who prefers "piecemealism" to historicism, scientism, holism, and all the other globalisms, and who is accustomed less to the giant stride than to the slow stumble forward. Thus there is rather little sympathy in the United Kingdom — too little sympathy, in my view — for statements such as the following (4):

> "Recurrent education can only be effectively implemented in conjunction with the policy of supporting social strategies, concerning in particular the organisation of labour, the structure of careers, and the laws and rules regulating job security and social retirement benefits.
>
> Eventually, recurrent education is a strategy not only for education, but for social change aimed at remodelling interaction between education and work and indeed, between the acquisition of human knowledge and experience and their application".

The scope is indeed wide, but the emphasis on integrating educational reform with other aspects of social provision is surely right.

The claims that have been made for recurrent education will need careful analysis. It remains to be seen whether older people are as flexible and as adaptable to the often difficult kinds of learning that some subjects require, or whether the pay-off from alternating education and work is such as to strengthen their personal motivations to learn. Cost benefit analyses of recurrent education are not encouraging. They suggest that there are very real difficulties in recovering the costs of preparing, say, a 35-year old rather than an 18-year old for certain occupations, and that very sophisticated student support schemes, or some expensive pattern of personal stipends, would be necessary if the benefits to the individual were to be recognisable and real. But all this said, there is much here that merits thought and consideration. Few countries have geared their processes of educational reform to a thoroughgoing strategy of recurrency. Yet in a large number of countries represented at this symposium, reforms and changes are taking place that are entirely with the spirit of recurrent education, and which acquire additional significance when seen in this context. We are rightly sceptical about blueprints for the future, whether in education or in any other field of human activity. The arguments for recurrent education are not, as I read them, intended to be such blueprints, and should not be criticised as such. If the arguments offered are often short on data, innocent as to political realities, utopian in orientation and over-optimistic about the possibilities of educational improvement, they also help us to grasp the broader significance of developments in our individual countries and provide us with a valuable common framework for debate and the exchange of ideas.

(4) OECD: *Recurrent education*, note by the Secretariat for the second meeting of the Strategy Group, Stockholm, March, 1971. Paris, CERI/SG/71.05.

Conclusions

I have tried to say something about the approach to the discussion of reform in higher education that might be appropriate to a meeting such as this, taking place at a time when recent political and economic events have done a great deal to shake the easy confidence that typified so many earlier considerations of what the future held for universities, colleges and other forms of post-secondary education. Let us accept the fact that, whether or not we call it reform, and whether or not we like it, higher education is bound to change. However hard we try, we shall never seize full control of this process, if simply because we lack the understanding of all the elements involved, and the means whereby they might be brought to heel. But however difficult an achievement, our aim must be to harness as fully as possible to the purposes of reform those energies that inspire and fuel the processes of change. To do this six things are necessary.

First, we have to have better means of monitoring the changes that are taking place and the effects of our own legislative and other measures. This argues for the development of much more sophisticated social and educational indicators than we have available at present.

Second, we need to develop a clearer consensus on what changes are desirable, in order to provide criteria in terms of which actual developments can be evaluated. This is eventually a political process, to which the academic has a clear duty to contribute his own knowledge and interpretations.

Third, we need to achieve a better understanding of the interconnections between, for example, admission policies, student careers, standards of attainment, modes of assessment, and institutional organisation, in order to be aware of the latent effects of changes and reforms in particular areas.

Fourth, we need to generate a climate of much more profound thought about higher education, to improve the quality of discourse in this field, both by

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strengthening and refining our tools, e.g. financial accounting, institutional planning and curriculum development, and by encouraging the discussion and exchange of ideas between the best people in their respective fields. We need more Flexners, more Veblens, more Ashbys and more Trows.

Fifth, I believe we have to contain the politicisation of the higher education system by re-emphasising that the radical and reformist tendencies that it is one of the duties of universities to foster are most likely to be creative rather than destructive in their manifestations and effects if they are mediated through a structure of disciplines, rather than expressed by direct action. We have also, I believe, to involve main-stream politicians in the work of the university in a way that helps to improve people's knowledge about and sympathy for its work.

Finally, we have to lubricate the connections between all the diverse parts of the higher education system, in the hope that by so doing we shall help the self-regulating mechanisms that have evolved with our educational and social arrangements to take care of those problems which, try as we may, we cannot solve by direct intervention. We must be bold in our hopes for reform, modest in our assessment of what we and our other fallible men can achieve.

THE BRITISH EXPERIENCE

Adaptation to change by British universities

by H. PERKIN,
Furness College, University of Lancaster.

Change in historical perspective

All societies get the education, and especially the higher education, they deserve. Since higher education until this century has always been for a tiny elite, societies which could not provide an adequate higher education for the few who were to lead and dominate them in the next generation were ripe for conquest or revolution. Higher education did not necessarily mean university education, and in the middle ages, before and after the founding of universities, the higher education of the feudal elite was in military prowess and statesmanship in the households of great men. Medieval society was at least half non-secular, however, and the Church invented the university for its own ends, to mould turbulent youth of high but not military ability into conformist clerks and clerical politicians. Later medieval society adapted the university to other ends, vocational training for the law and medicine and, less directly, for the clerical bureaucracy of the Church and royal government — a dangerous development which upset the balance of power between Church and state and brought the New Monarchy, new in its ability to manage affairs without the equal partnership of the Church, out on top.

In early modern times the universities, while continuing to supply the clergy for the national but now dependent Churches, adapted themselves to the education of the aristocracy and gentry who, in Britain, increasingly came to run the country and especially the localities in partnership with and on behalf of the monarchy — again, a dangerous development for the status quo, since the lawyers and legalistically trained country gentlemen of the House of Commons increasingly came to challenge, and ultimately to defeat, the prerogative claims of the Crown.

By the 18th century this last adaptation, in England at least, was no longer dynamic but moribund, a languid education for a leisured class which ruled unchallenged over a deferential society. Even that education, by the "monks of Magdalen" and their kind, "decent easy men, who supinely enjoyed the gifts of the founder" in Gibbon's famous characterisation, was not inappropriate to the society which encouraged and supported it.

But it was inappropriate to the society which came to challenge and succeed it, the middle-class industrial civilisation of Victorian Britain. (It had already been inappropriate to the rather different civilisation of 18th century Scotland, where the universities performed a different function, chiefly providing what amounted to secondary education for relatively poor but ambitious boys rising via the kirk or emigration, and enjoyed an intellectual renaissance a century before Oxford and Cambridge.) Here we come upon a corollary to our opening truism. All societies may get the higher education they deserve, but they do not necessarily get it in the same institutions; or, rather, existing universities may be leapfrogged by new foundations, more appropriate to the needs and demands of the new society, and be forced belatedly to adapt themselves and catch up.

This is exactly what happened in the 19th century in British university education. Oxford, Cambridge and even the Scottish universities were by-passed by new colleges and universities which catered for the needs of new social groups and occupations. The University of London (later University College) was founded in 1826 on the Scottish model not merely to provide higher education for middle-class sons unable to pay the fees and/or pass the Anglican religious tests of Oxford and Cambridge, but to offer subjects either not taught there or not taught in a modern way — practical medicine, political economy, physics and chemistry, modern languages and, eventually, engineering, mineralogy and education. The Tory Anglican response was not (at first) to reform Oxford and Cambridge but to found the rival King's College, on the same model with the same vocational subjects, plus theology, for the same middle-class market, and the University of Durham, on the Oxford collegiate model but with courses in such modern subjects as chemistry, mineralogy and engineering.

But the main provision for the new urban, industrial civilisation was in the new industrial cities themselves: the spate of technical, commercial and medical colleges which became the great civic university colleges of the Victorian age and the provincial universities of the first half of the 20th century. Their aims were admirably summed up in the first prospectus of the Edinburgh School of Arts, later to become the Heriot-Watt College, now University, in 1821:

"This association has been formed for the purpose of enabling industrious tradesmen to become acquainted with such of the principles of mechanics, chemistry and other branches of science as are of practical application in their several trades, that they may possess a more thorough knowledge of their business, acquire a greater skill in the practice of it and be led to improvement with a greater security of success."

In Manchester, Leeds, Liverpool, Birmingham, Bristol, Sheffield, Newcastle, Nottingham, and so on, the new colleges owed their foundation to local middle-class demand for cheap and chiefly vocational education, to local, competitive civic pride and, not least, to the practical generosity of industrialists like John Owens of Manchester, Josiah Mason of Birmingham and the Nusseys and Kitsons of Leeds. And they shaped their new creations in their own image: joint-stock universities, as it were, in which the largest "shareholders" (donors) had seats on the board (council) and told the "managers" (vice-chancellor or principal and professors) what to do.

The older universities, left standing, were reluctantly, forced to follow in their wake. First Cambridge, then Oxford, broadened their entrance to admit dissenters, cheapened the cost by allowing undergraduates to live in lodgings, offered new courses in the sciences, engineering and political economy, and built laboratories which, like the Cavendish at Cambridge, leapfrogged those of the provincial universities in scientific research. James Stuart, soon to be Cambridge professor of mechanism and engineering, founded the extension class movement in 1873; Arnold Toynbee of Balliol College launched the modern study of the Industrial Revolution from which the new society sprang at evening classes for working men in the East End of London in 1884 from which flowed, amongst other things, the University Settlement movement and the modern tradition of social work.

The Scottish universities, resting on their 18th-century laurels in what a recent historian has called "the paralysis of intellectual life associated with Victorian Scotland" (1) took longer to adjust to the new society — in Glasgow, for example, only seven honours degrees in natural sciences were awarded in the thirty years from 1864 to 1893, and the percentage of all graduates entering industry and commerce rose from under 2 % in the 1850s to little more than 8 % in the 1890s. But adjust they did, particularly on the side of technological research, and the inventions of late Victorian Scottish professors in the steam-engineering, electrical engi-

(1) Davie, G. E.: *The Democratic Intellect: Scotland and her Universities in the 19th Century*. Edinburgh, 1961, p. 3.

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neering, ship-building, chemical, agricultural and other fields are legion (2).

The close relations which not only Scottish but most English (not, significantly, Welsh) universities established with industry in the late 19th and early 20th centuries have been admirably chronicled by Michael Sanderson in a recent book (3). In these days when such ties are criticised from one side as too close and from the other as not close enough, it is salutary to be reminded how long-standing, for better or worse, those relations are. The universities of the Victorian age and the first half of the 20th century certainly adapted themselves to the new industrialism which they served, which had created or re-created them, and from whose managers they drew directly most of their endowment of capital and a large part of their recurrent income.

What sort of new society?

The inevitability and the — to some, unwelcome — success of the universities' past adaptations to social change may give us a starting point for an analysis of their adaptation to the newly emerging society of today. The problem here is to decide what the new society is — or should be — to which they are adapting. For the past we can always see, with hindsight, what the emerging society was. It was never so clear at the time. Today we have any number of self-appointed seers, proprietary-brand prophets and self-styled reformers telling us where we are going and where we ought to go. "Wisdom cries out in the streets and no man regardeth it." Some are false prophets, deliberately trying to manipulate a confused situation for their own political and, I am sorry to say, often authoritarian ends. Others are honest enough but confused, as reformers so often are, between analysis of what is happening to society so as to adapt the universities to its needs, and reform of the universities so as to bring about their desired society. Still others are genuinely perplexed about whether it is possible to meet the contradictory needs of the new society at all, and certainly whether it is possible to meet them in one kind of institution.

I belong to this last group, the genuinely perplexed, who want both excellence and social justice. After the dogmatism of both extremists — the extreme elitists and the extreme egalitarians — it is refreshing to find some objective analysis of what the argument is really about, whether the protagonists have really got their polarities right, whether the poles on which they balance themselves are really so starkly opposed as they claim, and what the real choices are for the universities and for the makers of higher education policy generally. Sir Alan Bullock recently distinguished between the two competing groups of reformers and critics of existing British universities:

"Both of these sets of critics agree, it seems to me, on wanting higher education to be more relevant. But the first wants it to be more relevant to the social needs of a mass democracy. And the second wants it to be more relevant to the economic and technical needs of a managerial society."

He went on to say that he agreed with neither set, that there was a need *both* for higher education, of very diverse kinds, for as many young people as possible who wished to continue their education after 18 *and* for the education of highly creative young people in the scholarship and research to expand the boundaries of knowledge and culture and for opportunities for them to do so when they had been trained (4).

Elitism v. egalitarianism: a misleading distinction

I would go further, and argue that both in the real world as it is emerging and in the ideal world towards which we should be working the distinction between elitism and egalitarianism, at least as it is applied by both sets of extremists, is simple-minded and misleading. Mass democracy, however egalitarian, is not uniformity. If we want high living standards, including access to the non-material goods and services of high culture and creative leisure, for everybody, we cannot have them without the complex division of labour on which they depend. It follows that every man (or woman) as worker must be a specialist, though a flexible specialist able to change specialisms when the changing nature of production, or his own changing interest, requires it. The form towards which modern society is evolving, I have argued elsewhere, is a professional society, i.e. not one which is dominated by professional experts but one in which every worker is in some sense a professional in having a specialised contribution to make and enjoying in exchange professional regards and

(2) Michael, S.: *The Universities and British Industry, 1850-1970*. 1972, pp. 153, 174, 160-67.
(3) *Ibid.*
(4) In "The Idea of a University", in *The Observer*, 30 December 1973.

conditions of work (5). It also follows that everyone, as citizen or merely as human being, must be a generalist, able to comprehend the world and his place in it and to adjudge and, when necessary, reject the humbug of the experts.

On the other side, while most specialists are necessary and some, like coal miners, power engineers and sewerage men, more necessary than others, there are a few whose creativity, while not necessary in the sense that we cannot live without it, can transform the lives of all the rest, either by providing more abundant means to our ends — new sources of energy such as nuclear power, new means of communication such as television, new resources such as biodegradable plastics or non-pollutant fertilizers — or by providing the ends themselves — new understanding of ourselves and our environment, new visions of life and the human predicament, new forms of art, music, literature. This is not to say that such creative people can only be educated and then perform their acts of creation only in universities. But it does mean that an adequate higher education system must provide somewhere for them to learn and operate, or suffer the irreplaceable loss of their social contribution. And since the quite considerable facilities, in the form of long-established libraries and well-equipped laboratories, already exist in special institutions called universities, it would be absurd to abolish them or to reform them in such a way that they can no longer perform this function.

The need for flexibility

What is needed, then, is a higher education system which:

— provides for the diverse needs, vocational and non-vocational, of as many 18-year olds as can benefit from it, and indeed of those much older than 18 who, at any time of life, have a need for refresher or conversion courses or merely for advanced education as an end in itself;

— educates them not merely in existing methods of thought and technology, but in the principles by which thought and technology may be transformed to meet the complexities of a changing world;

— provides facilities, different rather than unequal, for the specially creative who may be able to lighten the burden or enrich the lives of all the rest;

— is nevertheless egalitarian in both senses, of providing equally good higher education for an increasing proportion of the population and of providing equal opportunity for developing creative ability so as to recruit the latter from as wide a social field as possible.

The logic of this is neither the comprehensive university, trying to cater for the whole gamut of abilities and interests from the dedicated scholar to the equally dedicated technician, nor the present binary (or trinary) system, trying to hold asunder a so-called autonomous sector (mainly run by the central government) and a so-called state sector (mainly run by the local authorities) by spurious distinctions between "academic" and "vocational" education. It is an integrated but varied pattern of institutions, so constructed that whichever door a student enters he can follow the bent of his expanding mind and personality in whatever direction and toward whatever goal are best for him and, through him, for society. That may mean modular courses (merely in the sense of common time units with convenient cross-over points) and multiple cross-linking (so that, e. g. a student with a two-year Dip. H. E. can proceed straight to the Part II of a university or polytechnic degree, or a good graduate of any institution be eligible for a postgraduate course at any other). It may also mean the abandonment of obsolete practices, such as the ordinary degree still retained by some universities and colleges, which prevents a student once labelled, however able, from attaining honours and therefore from proceeding to graduate study. But within the pattern the different institutions retain the functions which they best perform.

Within such a higher education system universities would concentrate on the kind of teaching which is best carried on in close relation with research. Since research in many subjects, from engineering and medicine through business studies and the social sciences to theatre studies and the linguistics of English for foreigners, is carried on in the "real world", this does not mean an exclusive concentration on the "academic" and "non-vocational". It does mean, however, that universities would not trespass on the non-degree work of other institutions but would confine themselves to degree and post-degree courses (including post-experience and extra-mural courses) and would have a special (I do not say exclusive) responsibility for postgraduate research.

(5) Cf. my *Key Profession: The History of the AUT*. 1969, chap. 6, "The Academic in Professional Society".

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Innovation in British universities: current trends

Against this background, then, of what sort of society and higher education system the universities are and ought to be adapting to, we can now look at the kinds of adaptation which they are currently attempting. The first point that strikes one on looking for innovation in British universities is the astonishing number and variety of changes which are currently taking place. I wrote last summer to every Vice-Chancellor and to the Principals of major university colleges asking them for "striking examples of innovation or change in curricula, research or organisation". All of them very kindly replied, and although some of them modestly made a nil return, declaring that their own institution's innovations were not "striking" enough to be worth publicising, the range of the changes and experiments reported and their sensitivity to pressing needs and problems both within the university world and in the wider society outside were impressive. The Committee of Vice-Chancellors and Principals, prompted by the Chairman, Sir Hugh Robson, also sent me a list of *Examples of the responsiveness of universities to the needs of society*. Finally, I collected information from two other bodies engaged in studying change in universities, the Nuffield Foundation Group for Research and Innovation in Higher Education and the University Teaching Methods Unit of the University of London Institute of Education. My thanks are due to all three bodies.

As an individual without the resources and teamwork of such full-time study groups and as an amateur in the field of higher education research, I could not hope to emulate their expertise or catalogue the innovations reported, still less to evaluate or draw definitive conclusions from them. Those who would like such a catalogue and evaluation may find them in the Newsletters of the Nuffield Group and the conference papers of the University Teaching Methods Unit of the Institute of Education.

What I want to do in the rest of this paper is to discuss, in the light of the dilemma between providing for mass, or at least very much wider, higher education and providing for excellence in their service to society, some examples of the adaptability of the universities to change in four overlapping areas:

— their adaptation to the needs and demands of the new customers represented by a wider and somewhat more socially varied fraction of the student age group;

— the demands both of the latter and society as a whole for the teaching of new subjects and combinations of subjects, especially for a broader and more continuous education better fitted to the needs of a complex, post-industrial economy;

— the manifest need in a crises-torn world for research into urgent problems, whether physical problems such as scarce resources and environmental pollution or human problems such as social conflict, or war;

— finally, the universities' behaviour on a humbler level as good neighbours, not merely in relation to other institutions of higher education but also to the local community as a whole.

Adapting to an expanded student body

First, how have the universities adapted to the enormous expansion of student numbers which has taken place since the Robbins Committee was appointed in 1961? In the following ten years student numbers in Britain doubled, from 124,000 to 249,000 (full-time equivalent), and the percentage of the age group entering universities increased from 4.6 % to 7.6 %. (To get a full picture we should count the totals in higher education of all kinds, which have risen from 192,000 to 463,000, and from 7 % of the age group to 15 %). Although still a small and privileged group, university students have changed profoundly in their character and needs. Their social mix has not changed very much, and the percentage of students from working-class homes, at about 25 %, has scarcely altered, while the proportion of women students from all classes has risen slowly from about one in three to about two in five. But the effect of the expansion has been to dip more deeply into the pool of ability, as the Robbins statisticians called it, or as it appears more accurately and less tendentiously to the university teachers experiencing it, into the motivational range.

New motivations

In short, today's students are not necessarily less able, but they are differently motivated; less dedicated to the pursuit of traditional academic values, more disposed to question the "relevance" of an education which is too often seen, whether justly or not, as a preparation for university teaching. Or rather, a few of them, perhaps as many or more than ever, want to become academics, but the great and growing majority increasingly demand something different. The something different is not

necessarily more vocational, in the sense of training for a specific non-academic job — if it were we should expect a swing towards the applicable sciences and engineering instead of against them — but a general preparation for and understanding of the complex and confusing world outside so as to be able at least to cope with it and, more hopefully, to change it. Such ambitions are vocational in a higher, moral sense of the word, and we should be unwise not to harness the energy and idealism they represent to the improvement of mankind's lot on our shrinking planet.

Participation: demand and response

Now, we do not have to suppose that university teachers are unconcerned about the world outside and the future of humanity to see that such a major shift in student demand upon the universities was bound to create tension. Academics are in the innovation game, and exist to discover new knowledge which may change the world; but they are also in the conservation game, and are equally committed to preserving high academic standards, which are not whimsical shibboleths but the standards of truth and integrity and independence of political irrationalism whether of the right or left. (I make no apology for this old-fashioned liberal sentiment: the new-fangled relativism of both extremes floats on a heaving tide and has no philosophical rock from which to refute it.) The great fear of academics in the student unrest and confrontations of the 1960s — and I do not only mean reactionary academics, since it has come to be voiced by many of the most pro-student left (6) — was that student power would become anti-intellectual and destructive of the pursuit of excellence and therefore of the raison d'être of the university.

Despite this fear, British universities responded to the demand for student participation with a series of changes in their organisation more profound than anything in their previous history. The admission to Senates and Councils (or their Scottish equivalents) mainly since the second world war of non-professorial staff was by comparison a mere restoration of the status quo, since at one time practically all academics had been professors or college fellows directly represented on the governing bodies. But the participation of students in the government of most universities, however far it may fall short of the ideal of the National Union of Students, is a change unlike any other since the majority of European universities were founded, on the Parisian model of academic control rather than the Bologna model of student power. Two years ago, at another International Symposium in Brussels, I presented a survey of "Student Participation in the Universities of the United Kingdom" (7). At that time, apart from Oxford and Cambridge with their complex federal constitutions and slow-moving ways, only 8 of the 70 universities and major university colleges in England and Wales did not have student representatives or observers on Senate for the "unreserved" part of their business and only 4 did not have them on Council; all but one of these had agreed to it in principle, or to some arrangement by which the "unreserved" business was delegated to a body containing students. 49 of the 70 had joint staff-student committees on general university affairs; 42 had students on the planning or development committee, 47 on their buildings and works committees, 15 on the finance committee, and 6 on committees dealing with examination policy (but not actual results). No less than 63 had students either on the lower committees and boards dealing with "unreserved" curricular and other academic matters or on connected staff-student consultative committees. 43 involved students in the procedures for non-academic discipline, though academic discipline remained and remains a "reserved" area. And the vast majority admitted students, sometimes in equal numbers or in a majority, to committees dealing with student amenities, residence and welfare.

No doubt much of this will be repudiated by student militants as "tokenism" or "repressive tolerance", while some academics and administrators complain that the only subject student representatives want to talk about is more student representation. But most of the registrars who responded to the questionnaire thought that student participation, though time-consuming, had worked surprisingly well. Well or ill, however, no one can deny that the majority of British universities have adapted to the change in student demand in this area with a speed and flexibility which no one 10 years ago would have expected.

Adapting to the demand for relevance: a "systems approach"

The second area of adaptation is related to the first, since both students and their potential em-

(6) To take the American case, cf. the changing views of Barrington Moore, Eugene Genovese, Naom Chomsky and Lipset mentioned in Lipset, S. M.: *Rebellion in the University*. 1973.

(7) Published in translation as "Studentenparticipatie aan het Universitair Beleid in Het Vereinigd Koninkrijk", *Politica*, Leuven, December 1972.

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ployers have demanded new kinds of degree courses, less straitjacketed by the traditional single-honours disciplines, more relevant to the many-sided skills and potentialities required for creative leadership and management in modern business and the professions. It would be over-simple to call this a demand for broader education, since it is not so much breadth as flexibility, the capacity to shift rapidly from one specialism to another, or rather to bring to bear on a problem all the skills, whether technological, economic, psychological or whatever, required to solve it. Some prefer to call it the "systems approach", since most creative work is problem-solving, and many problems occur in systems which combine ecological factors, machines and human beings in one inextricable whole. Industry may be crying out for chemists or engineers, but the chemist or engineer it employs may find his most intractable problems are not scientific but economic (production at the right price) or simply human (getting the work force to accept a new machine or a new method of working). Similarly, the economist or accountant may need to anticipate the threat of a competitor's technical innovation or calculate the cost of bad industrial relations. It is this sense of the interconnectedness of things which has led so many universities to establish new interdisciplinary degree courses — not the ragbag approach of the old "ordinary degree" in sciences or arts, a second-rate course for those not good enough for single honours, but an integrated, balanced combination of subjects which a good graduate can put to use in the real world.

It began with the "new map of learning" which Asa Briggs inspired at Sussex in 1961, and which led via the "schools" system to the flexible general honours degrees of the "New Universities" of the 1960s. Perhaps the best recent example is what the Science Research Council calls "Total Technology", four pilot schemes which have been inaugurated in various universities, which sets out to teach engineers not merely the technology required for the job, but the economic and social environment in which they will perform it, including the problems of managing an all too human work force and marketing to fickle and unpredictable consumers (8). A similar systems approach to engineering has been developed at Bath University by Professor Joseph Black. Others include the first undergraduate degree in Production Engineering at Birmingham, which prescribes a "management exercise" for final year students, a postgraduate course on Production Methods and Management run jointly by Cambridge and Lancaster Engineering Departments, the undergraduate and postgraduate degrees in Technological Economics at Stirling, and economics courses for all engineers at Swansea.

Other examples are the new honours B.Sc. in Liberal Studies in Science at Manchester, a new honours course for science-based administrators in Administration and Chemistry at City University, the B.A. in Human Purposes and Communication at Bradford, Sir Colin Buchanan's new interdisciplinary School of Advanced Urban Studies at Bristol, the School of the Built Environment at Edinburgh, the new School of Development Studies embracing economics, geography, sociology and social anthropology at East Anglia, and the Board of Interdisciplinary Studies, beginning with urban studies, at Kent. The move towards Europe, before and after our entry to the EEC, stimulated European Studies at, for example, Sussex, East Anglia, Lancaster, Bath, Edinburgh and UMIST. Other area studies have begun under the stimulus of the Hayter Committees on Eastern Europe and the Third World, or independently, as in Comparative American studies (northern and southern) at Warwick, or Arabic and Islamic Studies at Lancaster. Perhaps most sensitive of all to the needs of the modern world are the new interdisciplinary courses in the environmental sciences, such as the options on Environmental Planning and Pollution at Essex, on Human Environmental Studies at King's College, London, on Environmental Chemistry at Queen Elizabeth College, London, the B.Sc. in Natural Environmental Science at Sheffield, or the M.Sc. in Environmental Pollution Control at Leeds.

Adapting to the challenge of world problems

But this brings us to the third area of adaptation to change in British universities, research into the urgent problems of our time. Here the intertwined problems of the pollution of the planet and the exhaustion of its resources, especially of its fossil fuels, thrust themselves to the fore. Pollution caught the public imagination before the current energy crisis, and a number of universities like those mentioned above responded promptly with courses and research projects. On the research side, amongst many others, Manchester set up a Pollution Control Unit in 1972, Dundee the Tay Estuarine Research Centre to collaborate with local bodies in combating the pollution of the Firth, and Cardiff its University Industry Centre which, amongst other microbiological researches, experiments with feeding treated sewage to mussels and even to chickens,

(8) *Total Technology* (Science Research Council, 1973).

ducks and rabbits and with the development of super-microbes to break down the poisonous effluents from coke ovens, gas and steel works.

As for the energy crisis, most geology departments are concerned with the hunt for fossil fuels, some more so than others. Aberdeen is developing specialist research and graduate courses in oil technology in response to the North Sea finds, Heriot Watt has an Institute of Offshore Engineering which teaches and researches in all aspects of underwater technology and has developed an unmanned midget submarine called Angus (A Navigable General-purpose Underwater Surveyor) for such operations, while University College London has a Shell lectureship to examine the problems of constructing and operating off-shore drilling rigs. As for alternative sources, most universities have some interest in nuclear energy, while Cranfield Institute of Technology's environmental research unit of the Electrical Research Association is experimenting with every conceivable source of power from wind and solar energy to hydrogen engines.

Such physical problems are by no means the only ones facing mankind, and perhaps the social ones are the most urgent of all. The world population explosion gets its share of attention, most specifically at Cardiff's Centre for Population Growth Studies, named after Sir David Owen, the United Nations administrator. Conflict studies, with simulated international crises, have been pioneered at LSE, Lancaster and, under the name of Peace Studies, at Bradford. The special social problems of Northern Ireland have attracted a $ 250,000 Ford Foundation research grant to Queen's University, Belfast. On a humbler level Exeter's Family Planning Unit provides both a service to the community and researches into psychological attitudes to birth control, while its Institute of Biometry and Community Medicine is studying the needs of the elderly and the social and physical problems of the chronic deaf. Its Medical Science Group is collaborating with the Engineering Department to produce an artifical hip joint, while similar work is being done by Strathclyde's Department of Bioengineering in collaboration with the Glasgow University Medical School.

The best known and most controversial area of applied research is the direct collaboration by university engineering departments and business schools with industry. Critics with unconscious irony condemn the diversion of academic energies to the service of capitalism but demand higher living standards for themselves and the workers which can only come from labour and resource-saving innovation. All universities have ties with industry in the form of research grants, contracts or consultancies, and some like Dundee and Loughborough have industrial research centres or consultancy companies which actively advertise their services and seek out industrial clients. Belfast, Birmingham and Heriot-Watt (along with a dozen polytechnics) have low-cost automation centres supported by the Department of Trade and Industry to research and advise local firms on cheap methods of technological innovation. A survey of research projects involving universities and industry and their value to students, staff and industrial firms is being conducted with a Nuffield Foundation grant by Dr. R. Brown of Sheffield University. It may perhaps provide an antidote to E. P. Thompson's well-known *Warwick-University Ltd.* There is no doubt that research contracts and consultancy work are growing. If they succeed in jolting British industry out of its post-war economic doldrums perhaps their ideological perils may be forgiven.

Adapting to the needs of the community

The final area of adaptation I wish to deal with is in the universities' service to the local community. Much of the applied research noticed above would come under this heading, since it is mostly service to local industry, and it often entails and overlaps with the provision of post-experience training courses for managers, engineers and many other kinds of specialists. "Continuing education" throughout life is now the current fashion: London University through its external degree system has been in the continuing education business since 1858, Cambridge through its extension lectures since 1873, Oxford through the WEA university tutorial classes since 1907, most of the provincial universities through their extra-mural departments since the inter-war period, and nearly all now provide facilities for students of the Open University. The Russell Committee has recommended that this traditional educational service to the surrounding community should be greatly expanded. But continuing education in our complex and rapidly changing professional society means more than an expansion of leisure-time education, desirable as that is. It means the continuous updating of specialist knowledge and techniques for the professional experts, and in some cases the redirection of experts into different specialisms. There has been an enormous growth not merely of short-term post-experience courses for managers of different kinds but also of longer-term refresher courses or in-service B.Ed. degrees for teachers, as at Belfast, Brunel, Cardiff and Coleraine, for hospital pharmacists as

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at Heriot-Watt, for health service and other social workers as at Nottingham, for the tourist industry at Surrey, journalists at Cardiff, even courses on understanding society for senior police officers as at Essex.

There are many other ways in which universities serve their local hinterland. They may organise centres for the co-ordination of research in local history, economic development, the physical and biological environment, folklore and culture, like the School of Scottish Studies at Edinburgh, the Institute of Irish Studies at Belfast, or the Regional Studies Centres at East Anglia and Lancaster. They may provide a group medical or dental practice like Manchester does on its doorstep in Rusholme or Liverpool at Runcorn New Town. And it will certainly provide cultural facilities, in the shape of theatre, concerts, museums or art exhibitions: out of a plethora of examples one might instance Cardiff's new Sherman Theatre with its gallery for art exhibitions and the annual Festival of 20th Century Music.

In all these ways, British universities have adapted and are adapting to the changing needs and demands of society. And if they fail — as they show no signs of doing, unless the recent cuts in government grant undermine their capacity or ingenuity — there are the polytechnics waiting in the wings, to outdo them and to force them to catch up again, as new institutions have so often done before.

The success of the binary policy

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Introduction

The general acceptance of the proposals of the British Government's 1972 White Paper about the structure of higher education in England and Wales signifies the achievement of an important success of the binary policy which was formulated in about 1960, formally adopted in 1965 and bitterly contested throughout the past ten years. In this public servants and politicians of all parties have successfully challenged British educational tradition defended by a coalition of academics and the intellectual left. Realism has triumphed over idealism in a debate on social policy and in a battle mainly conducted over the control of the education of school teachers. The academics have failed in the practical defence of their presumption that social progress requires the preservation of university dominance of the whole educational system. This is perhaps of particular international interest because the claim has so often been made by the British that their university system was one of the most democratic and progressive in the world. Throughout the paper refers mainly to England and Wales. Scotland and Ireland are separate and rather different mainly in that they are more complacent and conservative. But the trends in Scotland and Ireland are following in the track of those in England and Wales.

The essence of the binary policy is that a substantial and permanent sector of higher education should be maintained and developed outside the university system, under more direct control by local and national government than that exercised over the universities and using a more limited concept of "academic freedom" than that normally presumed in the universities.

The main objective of the policy is to make higher education more relevant and responsive to governmental and social demand. This is attempted in two ways:

— directly, by establishing institutions vulnerable to governmental and social pressure, and

— indirectly, by creating the threat of external competition, to compel the universities to become more responsive.

The thirty new polytechnics established following the White Paper of 1966 are the product of the binary policy and the White Paper of 1972 reaffirms

the development of these institutions. An evaluation of the policy must consist substantially of an evaluation of the polytechnics. But perhaps the clearest indicator of the success of the policy is the James Report on teacher education of 1972 and the response to it wherein explicitly or implicitly many of those who formerly were opposed to the policy have accepted its achievements and the desirability of its continuation. In effect the government's acceptance of the political essentials of this report implies the removal of the academic control of teacher education from the universities.

Conservative implications of British higher education reform

In spite of the success of the policies of improving secondary education between 1945 and 1960 which led to a large increase in the student demand for places, Britain was strangely hesitant in committing itself to the expansion of higher education in the sixties. Evidence of this abounds in official documents of the late fifties and there is some interesting comment on the attitudes of those days in the account given by Daiches of all the circumstances leading to the establishment of the University of Sussex. Thus between 1961 and 1963, although Britain was lagging a long way behind most other industrial countries in its volume of higher education, the Robbins Committee was considering whether or not there should be a large expansion. Britain was not committed to participate in the international golden decade of higher education until February 1964, when the government published its White Paper accepting the Robbins proposals for rapid expansion.

However, it was committed, before that date, to some expansion, the character of which is of significance in the present discussion, because it had some conservative implications with respect to the nature of British higher education and its institutions. The new expansion to which Britain committed itself between 1956 and 1960 tended to make British higher education more expensive and more separatist (i.e. more apart from the community and from other sectors of education) than it was before. Its characteristics included:

— A greatly increased emphasis on the residential principle and the ideal of the campus university and a reaction against the city centre university. Notably, there was a large increase in the number of purpose-built student residences at high cost and the creation of new self-contained campuses remote from industrial centres.

— A strong discouragement of university involvement in part-time education and in courses of education terminating at a lower level than the honours degree.

— The strengthening of a system of student grants which accorded great priority to degree students over students at lower academic levels and which gave most students no incentive to live at home.

— Some concentration of the expansion of technological education in technological institutions (the CATs) which, at that stage, had poorer resource standards than the universities.

— An increase in staffing costs by improving the staff-student ratios which were already, by international standards, very generous.

The Robbins Report of 1963 recommended a substantial expansion of higher education. Apart from this, however, it was a conservative document, perhaps because the committee was greatly concerned to demonstrate that this great expansion could be carried out without other radical change, in other words, without sacrificing the valuable traditions of British universities. The report was structurally, socially, educationally, and economically conservative. With the perspective of 1974 it is astonishing that this massive report which is generally assumed to have set the pattern for British universities for a generation gave virtually no consideration, for example, to the concept of a university degree, to the relationship of the universities to other sectors of post-school education, to alternative methods of financing higher education, to the relationship of higher education to the professions and the skilled labour market, to the desirability of continuing to educate prospective school teachers in isolation from other students, to the role of students in academic government.

Although the report implied some regret at some of the regressive trends listed above (it did not, for example, deplore the creation of the "new universities" of 1960 vintage but it clearly indicated that there should be no more) its comments on most of these trends were subdued and indecisive. Hence, at least by implication and in the subsequent realisation, the massive Robbins expansion was at high cost levels — considerably higher than those considered necessary for the British universities some years earlier. The vast number of new university places provided during the sixties were generous by the standards enjoyed by the students of the fifties and lavish by those of the forties and thirties. Despite the succession of economic crises endured by the British people throughout the sixties it was gener-

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ally assumed to be politically inexpedient for a government to cut university costs until the White Paper of 1972.

With respect to higher education outside the universities, the Robbins Committee recommended expansion, particulary in the short term, but with the intention that this higher education should be dominated by the universities. This higher education was in two distinct sectors — teacher education and further education (of which it was a part, alongside general, vocational and adult education, not classified as "higher").

For teacher education in the teacher training colleges Robbins recommended subordinate status within the universities which were to take financial control from the local authorities and the churches. The colleges were to be redesignated "colleges of education" and develop B. Ed. degrees of the appropriate universities.

For the colleges of technology and other colleges in the further education sector, Robbins recommended continuing local authority financial control with the colleges developing degree courses outside university control. They were to be regarded as candidate universities and a number were eventually to become universities — in this case the continuing university dominance was to be ensured by the ultimate goal of full university status.

The essential decisions of the binary policy were :

— the government's decision in 1964 to keep the colleges of education under the financial control of the local authorities and churches (and in effect the government Department of Education and Science) but to leave academic control with the universities:

— the decision in 1965 to encourage the growth of higher education in the colleges of technology (not merely in technology but in a wide range of studies including the humanities, social sciences and, most notable of all, education) outside university control but without the ultimate prospect of becoming universities.

Impact of the binary policy

The impact of these decisions was the greater, because as a consequence of growing demand for school teachers and for higher education opportunity, the growth in both sectors was considerably greater than the Robbins Committee had anticipated.

An implication of the binary policy enunciated by the Secretary of State in 1965 and 1966 was that the colleges of education, or some of them, should perhaps look towards the colleges of technology for their future affiliations rather than the universities. But this was subdued because the policy generated stiff opposition particularly among college and university teachers engaged in the education of teachers. The outstanding political success of the policy is that since then this resistance has been gradually overcome and there is a steadily growing acceptance of the idea of such affiliations. This has been marked by:

— the growth of teacher education in and associated with the polytechnics which were formed from the colleges of technology:

— the steady increase in teacher education outside university supervision in the polytechnics and the colleges of education:

— the formal recognition and encouragement of these trends by the James Report and the White Paper.

The implication of these developments is the gradual emergence of a large sector of higher education alongside, but not subordinate to the universities.

The basis of this political success has not been mere Ministerial obstinacy, as most academic commentators imply. It derives to a substantial extent from the educational success in the polytechnics. Fundamental to the policy was the proposition — first and best formulated by the Association of Teachers in Technical Institutions in its policy statement of 1965 *(The future of higher education in the further education system)* — that the colleges would develop better outside university control than they could within it. The evidence of the success of this is in the contrast between the degree courses developed in the polytechnics under the Council for National Academic Awards and the degree courses developed in the colleges of education under the universities. There is now widespread recognition that the polytechnics had much more opportunity in curricula development and, in recognition of this and in accordance with the recommendations of the James Report, the colleges of education are now starting to develop curricula along similar lines. Some of the leading colleges are turning to the Council for National Academic Awards and those universities that wish to retain academic control of colleges of education are being obliged to liberalise their system of control in emulation of the opportunities offered by the CNAA.

Among the most notable educational innovations of the second sector on which this success has been based (and some of which are now being followed in the universities) are:

— many new vocational degree courses;

— many interdisciplinary courses in which subject autonomy is firmly restrained;

— many part-time degree courses especially designed to meet the needs of mature students;

— substantial junior staff and student participation in course development and operation;

— effective accountability of teachers for their teaching and examining;

— demonstration that successful degree course development does not depend on the employment of professors of the conventional kind — that indeed it is possibly easier without them.

It seems possible that current developments in the colleges of education will provide the most striking evidence of these innovations and of the validity of the proposition that educational innovation responsive to social need is much more likely outside the universities than inside them.

If this is realised during the next five years a result will be a growth of pressure upon the universities to reform their curriculum and the methods for its control and development. Already it has been asserted by several university professors that many or even most university degree courses could not pass the tests now imposed by the CNAA on colleges and polytechnics. Some of Her Majesty's Inspectors are now advising the weak colleges of education to seek validation of degree courses by the universities because they are not strong enough to pass the tests of the CNAA. If these trends continue within five years there will be serious consideration of the possibility that at least some British universities should guarantee their standards by seeking CNAA validation and even possibly, that some or all the British universities should be absorbed into the second sector that the binary policy has so spectacularly established in the short space of less than ten years.

The context and process of planning in British universities

by A. C. MORRIS,
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Introduction

The interest in universities as organisations which I acquired derived in part from the fact that universities appeared to me to be already facing problems and assuming organisational forms which I felt large profit-making corporations must increasingly resemble, i. e. universities appeared to be, or likely to become, prototypes for socio-economic organisational forms of the future from which economic organisations might learn a great deal. Paradoxically I find in the universities a pre-disposition to seek to adjust themselves to an economic model of the firm which I had thought outmoded.

Universities comprise a highly educated and skilled community of people who expect to find self-actualisation in their work, who expect to participate in decisions affecting them, who *allow* authority in deference to acknowledged greater expertise, knowledge or intellect as opposed to recognising hierarchical authority of the rational legal sort described by the German sociologist Max Weber, who co-ordinate in largely self-chosen groups, and enjoy a high discretionary work content. I could go on — the point is that to someone with a background of experience and some theory in "business organisation" it does rather look as though the university already has many of the features which business theorists have argued for as likely to produce a highly effective, innovative, productive and satisfied organisation.

Yet in fact universities are often thought and not only by people not close to them, to be inefficient, and their behaviour often suggests they can be frustrating for both students and academics. I believe that much of the frustration derives from

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difficulty, whether real or imagined, in obtaining or influencing the direction of change. I suggest that planning is very much concerned with controlling and influencing the direction of change. Further, I suggest that frustration can be reduced and decisions improved by formalising and making visible in a planning process that control and influence of change.

A Systems Approach

The search for objectives: a false start

I came into the university asking about objectives and found myself involved in almost theological debate to which it was not obvious that there need ever be any end. My concern with attempting to identify objectives derived in part from the suggestion that I should look at the feasibility of applying "planning, programming, budgeting systems" to the university. Such systems usually lay great stress on specification of objectives. But my concern with objectives also reflected my inclination to turn towards the classical economic model of the organisation and indeed to regard as almost a definition of rationality that one should specify one's objectives and articulate values as a necessary first step before deriving the activities appropriate to the pursuit of those objectives and values.

It is certainly "tidier" if one insists that every organisation must have, and should seek to articulate, its goals or objectives.

Every public company has a well-defined objective in seeking to maximise the wealth of its shareholders, and the micro-economic model of the firm anticipates only limited compromise of the aggressive pursuit of that objective to accommodate social considerations. The decision structure is correspondingly designed to facilitate efficient achievement of that objective. That model does not seem to me to be appropriate to a university.

Policy in an institution such as a university is politically formed out of interaction between various participants producing a "general preference function" which need not correspond to that of any individual participant or group of participants. It is a dynamic process best represented by a hierarchy of competing objectives. Unlike the industrial organisation the university cannot be treated as a single organism with a consistent set of desires and a life of its own. The governance of a university is perpetually in the hands of a coalition.

Activity analysis

So, I decided to forget about objectives and concentrate upon identifying the activities carried on in the university. One can debate objectives for ever, particularly in a coalition, but it is observable that universities have car parks, catering facilities, and more essentially that they undertake teaching and research activities. So after that abortive attempt to ascertain what were the objectives of a university the first constructive step I was able to take in educating myself to an understanding of such an institution was to undertake what I will describe as an activity analysis.

The second step was to concern myself with understanding the formal organisation and this I attempted to accomplish by obtaining organisation charts, information on the committee and officer structure, sight of the charter, job descriptions etc. At this point I had an understanding of the university, or rather of the activities and formal organisation of the university, not much better than might have been obtained by mail order and so my next concern was to identify the informal structure of the university by talking to people, getting them to gossip, to be indiscreet which is much easier in a university perhaps because tenure loosens the tongue. Only at this point did I begin to feel where power really lay, where decisions were made, what group and individual objectives really were, e. g. to maximise research in a particular scientific subject.

The next step in my attempt to come to grips with the nature of the university was to observe behaviour, to examine the record and then to try and rationalise the phenomena observed, given the understanding I had now acquired of the activities, formal organisation, and informal structure of the university. For this purpose I undertook a case-study based on examination of the minutes of all papers laid before a variety of university committees during the previous five years.

The external constraints

My inability even at this point to rationalise behaviour to my own satisfaction led me to appreciate that one must first have an understanding of the external system within which an individual institution operates. This, I suppose, means that I came

to understand the need for a systems approach and correspondingly I turned my attention to considering the national and regional governmental and the non-governmental offices and organisations, including negotiating bodies representing particular interest groups. In the British context they include the University Grants Committee, the Committee of Vice-Chancellors and Principals, the Association of University Teachers, the Department of Education and Science, the Research Councils etc. I considered not just their formal role and powers but (particularly regarding the University Grants Committee which channels the bulk of government moneys into British universities) their informal influence. I found it essential to appreciate the impact of their rules and regulations most particularly as respects sources and conditions of finance and only with that understanding could I begin to rationalise what I had observed.

Such a systems approach implies that any change in the external system, be it structural or procedural, demands compensating change at institutional level. It also presumably implies that differing structures and procedures in various countries (particularly the nature of institutional autonomy, extent and manner of governmental intervention in policy, and the basis and timescale upon which government funds are made available) demand and will produce differing institutional forms and arrangements and necessitate different planning processes.

Rationalising behaviour at institutional level

Having acquainted myself with the external system which constrained the University of Sussex I now found that I was better equipped to rationalise behaviour at institutional level provided that I remembered that participant behaviour is not just a function of "what is" but also of "what is thought to be", i. e. of what is conjectured as well as what is known of decision-making processes. For example, in understanding attitudes and decisions regarding student admissions in a particular year it was important to understand that those making the decisions were not certain of the procedures to be followed by the British University Grants Committee in determining financial allocations for future years. It was commonly suspected that to admit any substantially increased number of students in that year of the then current quinquennium (and remember that for a British university its annual recurrent grant is fixed every five years and does not respond to any increase in student numbers) it was commonly thought that to do so might lower unit costs per student to a level upon the basis of which financial provision for the next quinquennium would then be calculated by the UGC. So game theory could not help explain behaviour which economic rationality could not and one way of increasing the economic rationality of behaviour might have been to make the national planning process more visible and thus reduce conjecture.

The nature of planning: Influencing change

An understanding of the university as a sub-system of a larger educational system, obtained in a manner analogous to that I have described, then allows identification of the capacity for change, the scope for choice — and I would suggest that choice is what planning is most essentially about. Planning includes and most usually proceeds from a platform of projection but I take the more fundamental concern of planning, which that first step only facilitates, to be with influencing change.

But identifying capacity for change is not sufficient (this is where many analysts fall down): to demonstrate elegantly an improved way of doing things is not enough. To obtain change you must identify and design strategies appropriate to the policy-making process and you must use the decision-making process. Some things will only be changed by moving external constraints — you may need to campaign for change in the procedures of an external body such as a government bureau — but to the extent that there is scope for change at institutional level then the policy-making and decision-making processes are of vital importance.

I found, as I turned my attention to the policy-making process, that I was turning too readily to the wrong schema — to the model of the economic organisation.

For me the political scientist and his view of the policy-making process have a lot more to offer in thinking about universities. My own interest is in economy in universities but my conviction is that many attempts to obtain it fail because they misunderstand the nature of a university.

I think it is important to subordinate concern for economy to a recognition that universities are politically rational institutions, not economically rational organisations. What this means is that one should not try, or rather that it may be counter-productive to attempt, to impose economic rationality on a politically rational institution.

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The distinction between institutions and organisations

It may be useful to distinguish between an institution and an organisation on the basis that the former seeks political rationality whilst the latter seeks economic rationality. The philosopher Paul Diesing (1) once proposed:

> "Political rationality is the fundamental kind of reason, because it deals with the preservation and improvement of decision structures, and decision structures are the source of all decisions. Unless a decision structure exists, no reasoning and no decisions are possible ... There can be no conflict between political rationality and ... technical, legal, social, or economic rationality, because the solution of political problems makes possible an attack on any other problem, while a serious political deficiency can prevent or undo all other problem solving ... Non-political decisions are reached by considering a problem, while a serious political deficiency can prevent or undo all other problem solving ... Non-political decisions are reached by considering a problem in its own terms, and by evaluating proposals according to how well they solve the problem. The best available proposal should be accepted regardless of who makes it or who opposes it, and a faulty proposal should be rejected or improved no matter who makes it. Compromise is always irrational; the rational procedure is to determine which proposal is the best, and to accept it. In a political decision, on the other hand, action never is based on the merits of a proposal but always on who makes it and who opposes it. Action should be designed to avoid complete identification with any proposal and any point of view, no matter how good or how popular it might be. The best available proposal should never be accepted just because it is best; it should be deferred, objected to, discussed, until major opposition disappears. Compromise is always a rational procedure, even when the compromise is between a good and a bad proposal."

The distinction may be compared with that of some theologians between man and animal. Man may be seen as an animal and similarly "functional", yet as distinguished by his immortal soul and capacity for unselfish concern with values. Yet much concerning man may be derived or hypothesised from experimentation with and observation of animals — particularly regarding the "functioning" of the distinctive animal that is man. Similarly, if institutions such as universities are organisations distinguished by a mission rather than a functional objective, then much concerning universities may be derived or hypothesised from study of organisations. But the structure appropriate to an institution in which men combine to pursue a variously conceived mission by regulating their conduct to be politically rational must differ from the structure appropriate to an organisation in which men combine to pursue an objective by regulating their conduct to be primarily economically rational.

An institution embodies values whereas an organisation serves specified ends and the most obvious distinction between them, paradoxically, arises from the impossibility of "valuing", in the economic sense, "values" in the philosophical sense.

By definition it is proper, and in practice it is usually possible, not only to attempt to quantify in monetary terms the resources input to and the output from an economic organisation but also to refer to the value added (or, for many organisations, the "profit") as a measure of the succes of the organisation in attaining its economic objective. However, in an institution, though it is usually possible to express the input resources in monetary terms it is usually more difficult, often impossible, to value output — and attempts to do so meet not only technical problems but also arouse philosophical doubts as to whether the concept of value added has much to offer where concern is with values and mission rather than activity and objectives.

The attempt to distinguish universities as essentially spiritual and concerned with values, from organisations as essentially functional and concerned with the economic performance of tasks, is perhaps overdone. Certainly, as has been acknowledged, university institutions are organisations and observably they perform, and expenditure upon them is often justified by reference to the economic value of, essential tasks such as teaching and research. But universities were not developed and are not justifiably maintained or expanded by reference only to their utility in such task performance. It is doubtful if universities and the methods commonly there employed are the most efficient means of imparting knowledge or of applying discovery. Universities are justified by the cultural synergy which they obtain in fusing the often economically inefficient performance of those necessary tasks.

(1) Diesing, P.: *Reason in society*. Urbana, University of Illinois Press, 1962, p. 231.

The attempt to apply management theory to the universities

Over forty years ago, as disciples of Fayol and Taylor turned their attention away from industry and toward the application of "scientific management" to the universities, A. Flexner (2) was moved in lamenting their arrival to caricature:

"... the businessman, the expert, the man who can chart things ... pouncing on the university ... he organises and maims ... he builds a nicely articulated machine; he distributes functions; he correlates; he does all the other terrible things that are odious to the creative spirit. He thus gets together a mass of mediocrity, but he can draw you a chart showing there is no overlapping, no lost motion. He does not show that he has left no place for the idea that no one has yet got. Efficiency in administration and fertility in the realm of ideas have in fact nothing to do with each other except, perhaps, to hamper and destroy each other."

More recently T. Veblen (3) expressed the continuing concern of many academics as to a concept of efficiency which "puts a premium on mediocrity and perfunctory work, and brings academic life to revolve about the Office of the Keeper of the Tape and Sealing Wax". Veblen observed that:

"Men dilate on the high necessity of a businesslike organisation and control of the universty, its equipment, personnel and routine ... In this view the university is conceived as a business house dealing in merchantable knowledge, placed under the governing hand of a captain of erudition, whose office it is to turn the means in hand to account in the largest feasible output."

The fears of those earlier critics would hardly have been allayed by F. Rourke and G. Brooks (4) description, published in 1966, of the "managerial revolution in higher education". Rourke and Brooks chose their title because observation had persuaded them "that the pattern of change now taking place in the management of institutions of higher education represents a break sufficiently discontinuous with past practice to merit the description as a revolution". They went on to describe changes which, they held, reflected a trend toward "rationalising" the management of institutions of higher education and asserted that "from now on the government of these institutions will reflect a much more conscious effort to plan the course of their development, to relate means to ends, and to seek to obtain a maximum return from the university's resources".

Failure due to faulty assumptions

Yet G. Baughman (5), writing in 1969, found fascination in reflecting that, forty years after being "pounced upon", universities were still no closer to having the industry equivalent of management.

Baughman conjectured that the likely reason for the failure of attempts to apply management organisational techniques arose from two faulty assumptions. The first, he suggested, "... is that the university organisation is relatively parallel to industrial or governmental organisations. The second, and perhaps a corollary, is that university administration is equivalent to university management".

Faulting the first assumption, Baughman sought support in observable behavioural phenomena, in the minuted record and from consideration of the history and origins of universities. In particular he noted the difficulty in, and disinclination toward, specification of university, as opposed to industrial, objectives. The author of this paper is similarly persuaded of "the myth of organisational parallelism" at least insofar as it relates to industrial organisations. As to the second assumption, Baughman suggested that the administrative role within a university, reflecting its medieval origin, continued to be far more concerned with stewardship than management, which he defined as the planning, organising, and controlling of scarce resources in the accomplishment of objectives. The validity of that second assumption does perhaps rest upon the individual definition of administration, of management, and, in turn, distinction of the use of each at one moment to describe an activity and at another to describe those who perform it. What is supported here is that "management" when used to describe those persons who properly make decisions within a university is certainly not synonymous with "admini-

(2) Flexner, A.: *Universities — American, English, German*. New York, Oxford University Press, 1930, p. 86.

(3) Veblen T.: *The higher learning in America*. New York, American Century Edition, 1957, pp. 62, 76-77.

(4) Rourke, F. E. and Brooks, G. E.: *The managerial revolution in higher education*. Baltimore, The Johns Hopkins Press, 1966, pp. vi, vii.

(5) Baughman, G. W.: "Evaluating the performance and effectiveness of university management information systems", in *Management Information Systems*. Western Interstate Commission for Higher Education, 1969, pp. 1-7.

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stration". As Baughman has it "... faculty, students, administrators, and trustees represent a pluralistic polity with vested interests and rights to self-management".

The fundamental difference between university management and industrial management reflects in the need for the problems of the former to be solved with political rationality as a primary criterion and economic rationality as a secondary criterion. A public company directs its energies towards identifying and satisfying the wants of external publics and regards satisfaction of the demands of its internal publics (as represented, for example, by the trade unions) as a constraint rather than an objective. A university should direct its energies toward identifying and satisfying the wants of its internal publics whilst recognising the requirements of external publics (as represented for example in Britain by the University Grants Committee) as a constraint — an introspective exercise but one which must yet produce an institution as extrovert and socially relevant as the balance of attitudes amongst its members.

Planning as a management function

It is an underlying theme of this paper that planning is very much concerned with controlling and influencing the direction of change. A "systems approach" to understanding the institution has been recommended as helping to identify the capacity for change which will vary from institution to institution and particularly from country to country according to the nature of the educational system within which the institution is constrained. To relocate the capacity for change normally requires structural and systems changes, often external to the institution. But though the capacity for change and correspondingly the form of planning process required varies from one institution to another, the need for and basic nature of planning is constant.

The approach I would recommend, essentially that of a would-be economiser, may perhaps be distinguished by its acknowledgement of the unique nature of a university, recognition of the distinction between economic and political rationality, and an ambition to improve decisions by attention to the policy-making process and the input to political debate of more accurate and relevant information. Throughout this approach, stress is laid on the need to anticipate behavioural response to change (including change in administrative systems and procedures) and seek to induce the coincidence of that response with the pursuit of economic efficiency in the prosecution of politically determined activity.

It is of the essence of this approach that one asserts that the committee, officer, and administrative structure appropriate to an institution such as a university should encourage, sensitively record, and facilitate the efficient implementation of policy politically determined by the collision of various interests in continuing and, hopefully, informed and intelligent debate. Similarly, that the form in which information is classified and used affects the actions of policy-makers, and conversely, that alterations in form will produce changes in behaviour. But most important it seems to me is that planning is a management function which cannot properly be discharged whilst confusion reigns as to who or what constitutes "management".

What is "management"?

Fortunately we may allow those who prefer to do so to speak of "governance" rather than "management" when referring to institutions. I personally prefer the pragmatic approach of H. A. Simon (6) who simply confessed that "I shall find it convenient to take mild liberties with the English language by using 'decision-making' as though it were synonymous with 'managing' ". Similarly G. Lockwood (7), in an article "Planning in a University", defined planning as the collective exercise of foresight and then suggested that "... since foresight is required in most decisions, then planning becomes in practice almost identical with the decision-taking part of management." So, if we read H. A. Simon and then G. Lockwood we might begin to reason that a comprehensive planning process such as Lockwood describes comes close to being the management (or "governance") process itself. This is interesting and worth pursuing.

It seems to me that whenever men combine in organisations, whether economic organisations serving specified ends or their higher order cousins which we label institutions, then, if anarchy is to be avoided, they must bring into existence a framework which will facilitate first the determination and subsequently the co-ordination of their efforts.

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(6) Simon, H. A.: "The executive as decision maker", *The New Science of Management Decision*. Harper and Row, 1960, Chapter 1, pp. 1-8.

(7) Lockwood, G.: "Planning in a University", *Higher Education* Vol. 1, No. 4, pp. 409-434.

That part of the organisational framework which facilitates determination of what is to be done I take to be the policy-making process and those who participate are policy-makers. That part of the framework which facilitates co-ordination of whatever it has been determined to do I take to be the administrative process and those who participate are administrators. In practice individuals often perform both roles.

Just as an institution is a higher order organisation so is policy a higher order decision. Policy is decided upon largely to facilitate delegation of authority by pre-determination of the basis upon which decisions on repetitive and routine matters are to be made. To the extent that a person to whom decision-making authority has been delegated is constrained by policy and lacks discretion in the exercise of that authority, to that extent we have a pure bureaucrat. To the extent that a person to whom decision-making authority has been delegated is not constrained by policy and/or has considerable discretion, to that extent we approach what even P. Drucker (8) (in an economic organisation) would recognise as a manager.

Where is the locus of power?

What is very different in an institution such as a university when compared with an economic organisation such as the Ford Motor Company is the locus and size of the group who have (or claim) the right to determine policy and the locus and number of individuals allowed to exercise considerable discretion in making decisions.

The extent and interpretation of "academic freedom" varies widely between cultures and nations even within Europe but I think the academic who is lecturing in a university has a greater discretion in conducting the teaching/learning process than has the administrator in discharging his bureaucratic role. Indeed, the policy which constraints the administrator is to a considerable extent determined by the academics as a body or by their representatives. In a university the many who are engaged in the conversion process which produces educated graduates and original research enjoy a high discretionary work content and also are the dominant policy-making group. The few who are engaged in administration have a more limited discretionary work content and are a subservient group though their role as co-ordinators avoids their complete impotence. In the Ford Motor Company the position would be reversed, with the many who are engaged in the conversion process which produces automobiles and commercial vehicles having only a limited discretionary work content and little authority in determining policy whilst the few engaged in administration enjoy the greater personal discretion and dominate the policy-making process. You may or may not accept what I have said. Certainly it is dangerous to generalise before an international audience as to the locus of power in universities — patterns do vary from one country to another. However, I hope you will find some value in reflecting on these matters and recognise that a *participative* planning process as recommended and described by G. Lockwood may be essential rather than merely desirable. If planning is near synonymous with decision-making then it is a condition precedent to the establishment of a viable process that you locate and tailor the process to embrace those who ultimately determine policy.

Further, if planning is near synonymous with decision-taking then though what constitutes improved policy must remain a subjective value judgement yet, since by definition an improved policy is a different policy, it is appropriate to attend particularly to an examination of the policy-making process, seeking to identify those sensitive variables which, if changed, are most likely to alter decisions.

A model of decision-making and policy-formation

Let me put up a simple model of decision-making and policy-formation for inspection. Decision-making implies choice between alternatives. The decision-maker starts with a perception, accurate or otherwise, of the existing state ("what is") and seeks to move incrementally towards a state offering greater satisfaction ("what will result") by choosing from an identified set of feasible alternative actions. Where decisions are taken by two or more persons jointly then their competing individual values, multiplied by structurally implicit political weights, combine to produce a "general preference function". It is proposed that, in the university context, one can approach, little closer to a plausible definition of "an improved decision" than that it is a decision which differs from that which might otherwise have obtained because of concentration on one or more of the following factors:

— *The accuracy of the initial perception*, for example by improving the accuracy detail, rele-

(8) Drucker, P.: *The practice of management*, London, Heron Books, 1954, Chapter 1.

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vance and comprehensiveness of accounting and control information; the extent to which competing task systems (e. g. teaching and research) are delineated and substitutive elements juxtaposed to invite marginal analysis.

— *Extending the identified set of alternatives,* for example by improving the servicing of decision-making forums (usually committees) by administrators and the degree of technical skill and expertise made available — particularly analytical skills and techniques.

— *The accuracy of the perception of what will result,* for example by use of analytical skills and techniques to identify incremental resource implications which combined with an accurate initial perception allow accurate description of alternative "futures".

— *Change in the organisation structure, systems and procedures,* for example by restructuring of the organisation to recognise overtly the competition of objectives and task systems, to articulate role conflict, and to encourage the coincidence of behavioural response to systems and procedures with the pursuit of economic rationality; improved internal "market research" aimed at identifying the attitudes and preferences of the internal public.

The value of erecting a simple model of the decision-making process is that it invites thought as to how one might obtain change and it is from such consideration that one might hope to deduce an appropriate planning process. I have hardly proposed a very elegant model of the decision-making process. My purpose has been little more than to suggest what I think may be an alternative cognitive map and to precipitate some fundamental thinking about the context and process of planning in universities.

The simple model I have used implies the importance of organisation structure and indeed would suggest that in structuring the university regard should be had to the decision needs and policy processes as well as to the tasks to be performed. One can propose that in a university the best way to obtain productivity from, and efficient distribution of, resources, is to structure the institution and design its processes so to articulate competing activities and interests that a process of group dynamics will discipline the inefficient or disinterested and seek to deny them resources. This implies formalising the tensions between competing activities so that they may openly compete and negotiate with one another; it also implies delineating hitherto often informal groups sharing common interests in, for example, research.

The same model also implies the importance, and invites the sophistication, of techniques — particularly in so far as those techniques improve the accuracy of perceptions both of "what is" and of "what might be". For example, in seeking to identify and satisfy the wants of internal university publics there is much to be learnt from the study of the market research function within economic organisations. The marketing approach emphasises a continuing and simultaneous concern to identify, stimulate, satisfy and modify customer "wants". If it is widely argued that in practice marketeers concentrate on stimulating and modifying, often by unethical means, the customer "wants" which they have identified — that is evidence of "bad" marketing rather than evidence that "marketing" is bad. If we re-label the marketing approach described above as a "consumer sovereignty approach" then many of the techniques employed (particularly in market research) have much to offer in an institution which, it has been suggested, should be structured to encourage, sensitively record, and facilitate the efficient implementation of policy politically determined by the collision of various interests in continuing and, hopefully, informed and intelligent debate.

Thoughts on administration and administrators

It is often argued that at national, at local governmental and at institutional level, increasing size, complexity, and rate of change result in the accrual to "bureaucrats" of influence on policy quite disproportionate to that implied by formal descriptions of their powers and duties. I acknowledge that it is important to distinguish between disproportionate influence being sought and that influence tending to accrue as a function of the factors mentioned. Similarly, that on identifying a gap between the formal and the informal organisation it is important to pause before taking that gap as evidence in support of conspiratorial theories of decision-making.

Indeed there will always be a gap between the formal and the informal organisation, and between official description of what should happen and the phenomena observed. That gap should exist in any political institution which is constantly adjusting and evolving.

Ways to reduce frustration

At most universities an efficient bureaucracy periodically updates a description of the formal organisation; it may be that if the bureaucrats were less efficient in this respect and if the current ethos of universities laid less stress on participation, democracy, devolution etc., then whatever frustration is thought to arise from apparent failure to "deliver the goods" might be reduced. Certainly some people appear to regard as promised, desirable, but not forthcoming, a participative policy-making process which can be argued to be neither desirable nor attainable.

If it is desirable to narrow the gap between the formal and the informal organisation in order to reduce a breeding ground for conspiratorial theories and frustration then it should not immediately be assumed that behaviour must always be changed to satisfy expectations. It may be that expectations need to be changed by a process of education. The challenge may not be always that of adjusting present structures and practices but of articulating their rationale and, for example, rehabilitating the notion that the exercise by a few of influence disproportionate to their numbers is both proper and necessary.

It may be to the ultimate disadvantage of the universities that those who enjoy much influence are too sensitive to linguistic fashion to defend the propriety of its exercise in plain terms.

There are what are commonly described as oligarchies; it is naive to suppose otherwise, and paranoiac to imagine that they represent a conspiracy rather than a natural behavioural phenomenon.

Some of the more muddled thinking about what ought to happen appears to derive from confusion over what is meant by democracy. It is difficult to believe that many members of a university would favour decision-making by a daily computerised instant referendum of the opinion of a wholly and equally franchised university community — yet objections that what actually happens is undemocratic often seem to imply just that.

What is needed is accelerated evolution, not bloody revolution. What is important is concentration upon access to committees, election procedures and the appropriate franchise, tenure of officerships, how the performance of the executive is to be monitored by the electorate etc. It would be a nonsense to regard committees as political forums for the determination of policy and then propose an "optimum model". All the matters referred to must be the subject of continual debate, negotiation, and constructive friction, with the policy-making process being one of "disjointed incrementalism" (9)

Administrators may be over-cautious in enquiring as to practice and procedure at grass roots level. The most important decisions in universities concern selection of staff, determination of curriculum and teaching methods, selection of students. The ways in which those decisions are arrived at are, in all three cases, properly determined by academics. But, if some academics and students are frustrated in obtaining change (or even its contemplation) then it may be that they require greater descriptive and legislative support from the administration. It may also be that a formalised planning process is the appropriate vehicle for change.

Counterbalancing increased executive power

The university community, having determined policy politically through the committee structure, must be prepared to clearly assign and permit the exercise of executive (decision-making) authority. It is much easier to monitor individuals than committees. The organisation of a university should attempt to identify responsibilities with individuals whilst strengthening consumer influence by establishing user groups to monitor the effectiveness of academic support services. Perhaps the checks on the professional administration need reconsidering — not in order that its influence be reduced but rather that it might be allowed to increase, subject to adequate safeguards and greater accountability. There is rarely a user group to influence and embarrass the professional administration yet it is the principal academic support service in the university. In the British context the Vice-Chancellor is titular head of the professional administration but can hardly be expected to answer for or closely supervise its work and cost. Theoretically a council dominated by lay members performs that duty in most British Universities; the Council Treasurer might be seen as Chancellor of the Exchequer with the Finance Officer (a full-time professional administrator) as senior civil servant in the treasury. But in practice, and particularly in the absence of a Finance and General Purposes Sub-Committee of Council, such a senior administrator often combines near ministerial authority with the role of senior civil servant.

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(9) Braybrooke D. and Lindblom, A.: *Strategy of Decision*. New York, Mac Millan, 1970, Chapter 5.

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In counterbalancing the exercise by executives of the powers entrusted to them, and particularly in considering under what conditions the growing influence of the professional administrator is acceptable and might be best monitored, it is well worth "mapping" again to a political schema and considering the creation of a role or roles analogous to those of the ombudsman and, in the UK context, of the Comptroller and Auditor General — both completely independent of the executive but having powers of enquiry, access, and public report to parliament (substitute senate in the English academic context). I am interested to note the experiments along these lines in North America and Australia.

So the current challenge may not be entirely that of adjusting present structures and practices but rather of articulating their rationale and, for example, rehabilitating the notion that the exercise by a few of influence disproportionate to their numbers is both proper and necessary. Substitute "examining the proposition" for "rehabilitating the notion" and it would appear a not inappropriate part purpose of a common arts/science course on "organisations, decisions and society" — with particular reference to the society that is a university. It might be an effective way of "inducting" new students and staff and it is interesting to reflect on how attitudes and perceptions of all the participants (including academic and administrative officers) might be modified!

Conclusion

I seem to have discussed everything, or perhaps more accurately anything, but planning. That is because I had in mind when choosing the title of this paper that too often institutional planning is debated as such without regard for its context, which I suggest to be that of a pluralistic political institution in which the process of agreeing upon change (with which I take planning to be concerned) is correspondingly complex.

My interest in you derives from the role which I see you as having in the policy and decision-making process. I sometimes think that planners and administrators, particularly those involved at institutional level, turn too readily to the wrong schema, i. e. that of the economic organisation. I think the political schema in which you relate to the body of knowledge and experience you have of national and local government may offer you much more.

I ought perhaps to admit to a perception, which you might not find flattering and I would not insist to be accurate, which I have of you. Planners and administrators in higher education, reflecting the dramatic expansion in recent years, are a disproportionately young, almost wholly graduate, sample, the younger members of which have very often never been outside the educational system since the age of four or five, apart perhaps from those who spent a period doing compulsory military service, i.e. planners and administrators in higher education are, and will increasingly be, very inbred generalists. I sometimes fear that too many planners and administrators incline, and I suspect that you will hotly deny this, to allow much greater reverence to techniques, professional expertise, and what are essentially industrial management pratice and concepts than I think they deserve.

Some of you see yourselves as performing the management function in the institutions of higher education whilst I think of those of you as more akin to civil servants and find you of greater interest because, as the civil service institutions of higher education, like your Whitehall counterparts in the British context, you exert influence disproportionate to both your numbers and to the formal description of your roles. The simplified model of the decision-making process which I used indicated the source of much of your influence, i.e. your control over much of information flow, your effect on the perceptions of others, your role in defining and describing policy choices.

I think your influence is increasing as a function of size and complexity. I think that it probably ought to increase. I think that many radical faculty and students who brood on that gap, which your influence witnesses, between the formal and the informal organisation and build theories of conspiratorial and oligarchical decision-making might find in fact that, if the tentacles of bureaucratic prescription and legislation reached further into the basic tasks of teaching and research then their ability to obtain change, or at least its debate, say as respects curriculum content, might be increased. But I anticipate that if you are to have ever greater influence it will raise demands for closer monitoring of your performance, equal access to information, and visibility of your procedures and techniques.

I wonder how you see institutions of higher education? Is it worthwhile to distinguish them as political institutions rather than economic organisations?

I wonder how you see yourselves, whether you think yourselves sufficiently accountable and, if not, what form greater accountability might take?

I wonder these and many other things because they represent or tell us something about the context within which planning takes place.

THE CHALLENGE OF THE NEW MEDIA

Systems approach to educational technology

by J. BLACK, University of Bath.

A new contender for resources

The division of the recurrent grant of a university into allocations for teaching staff, for the library and for central services has planning and administrative advantages, but it can have unfortunate consequences for teaching since the three come to be regarded as distinct and almost unrelated areas of university spending.

Now, with the advent of new resources and needs such as the growth of educational technology units and courses for new teachers, there is another distinctive and unrelated contender for a share of the limited funds available.

All involved in the demands for more funds from the central source unite in an intellectual tribute to the library as a temple of scholarship and learning and demand that more money be allocated to it — once their own requirements have been met. Then they return to their desks or laboratories to continue the budgetary wars in order to maintain their own staff-student ratios.

The new claimant for funds, educational technology, lacks a similar academic esteem both because of its slightly suspect origins in the entertainment and communications industries and the shortness of time it has had to demonstrate its effectiveness.

The need for a global approach: an elementary "systems analysis"

Seen through the eyes of the student, however, all the resources, whether it is academic staff as lecturer or tutor, the books and journals available for study in the library, the television and slide-tape programme, or the new lecturer giving a better instruction because of the course he attended, are closely linked. Taken together, they provide him with a "learning situation". The more effective this is then the more successful he is likely to be in attaining the required standards of performance.

The interaction of all aspects of university teaching is so complex that it is no longer fruitful to discuss any particular aspect of the total process in isolation from the others. This suggests that an elementary "systems analysis" might make us more aware of the problems of the relationships involved.

The conventional system

In a conventional teaching situation a teacher has an agreed curriculum or programme and undertakes to transmit sufficient information and understanding to enable the learners to be able to perform a defined task to some previously determined standard of attainment. This performance is measured (or so we believe!) by giving the learners examinations or tests on completion of a specified period. In the case of physical skills this is probably quite an accurate procedure, but with more abstract or intellectual modes of behaviour it becomes increasingly difficult.

The group may have been arbitrarily selected because its members have comparable previous attainments and the level of presentation and the standard of work is based on a concept of a model learner whose ability is assumed from the learner's

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achievements on preceding courses. This assumption is rarely tested before the teaching programme starts and it is hoped that the whole group clusters around the model. Thus in a lecture programme on damage from industrial noise, for example, the whole group may have passed A-level physics, but only 10 per cent may have learnt about sound. Without some introductory explanations most of the group start off with a handicap, and later failure may be wrongfully attributed to lack of effort or poor instruction.

The teacher may use the blackboard, slides, film and even direct TV to improve his communication, and there is no doubt that some such "entertainment" does enhance learning within the lecture. But these are only the *teacher's* audio-visual aids, in that he selects the material to be displayed; in most cases it will not be available for further use by the learner, apart from what has been recorded in hastily written notes.

In addition to the lectures, the teacher will refer the learner to printed material in books, manuals and handouts. Their significance in the system is that they make the learner aware of the contributions self-instruction can make to his learning, and the value of learner recall material. This self-reliance should also inculcate the habit of seeking out information for himself, whether in a library or in a modest catalogue store. Learning at a lecture is fairly passive, so in our system we use personal activities such as laboratory experiments, designs, projects, essays, reports, constructions — any challenge to individual effort. Value will be gained from these only if they are criticised or discussed by the supervisor, tutor or instructor, and the comments passed back immediately to the learner. In systems parlance this feedback signal enables the learner to assess where he is and how he is getting on, and thus to take any necessary action to get back on course. The faster the feedback signal the more useful it will be; continuous weekly correction is obviously more effective to the learner than a major correction only at the end of term. The significance of the staff-student ratio in the "system" is primarily the maintenance of this fast feedback, which makes such heavy demands on staff.

The new techniques

Teachers and librarians may feel happier if we retain the system described. Let us add to it, however, the extensions made available by the new concepts and technology, particularly the considerably enlarged potentialities of self-instructional material arising from fast copying print, and the memory of film and magnetic tape. To books we can add hand-outs; audio and video-tapes; cassettes and slide-tape facilities; films.

Because this material is mainly for personal study it lends itself to storage and display by library methods, which continues to maintain the teacher, learner and librarian in a familiar compatible relationship.

An educational services unit

Once the teacher becomes aware of the scope of the new techniques he will soon realise the desirability of generating much of the new type of material within his own institution in the context he desires. Hence the need arises, because of the complexity both in concept and technical execution, of a specialised professional service within the university. So to our systems we must add an educational services unit not as an alternative to the teacher, but as an essential partner in providing the best possible learning opportunities. As such it must be linked with the teacher, and with the library.

Even with the most generous staff-student ratios economically possible there will be limitations to maintaining the quality and quantity of this feedback. Hence new techniques which will help the learner to study on his own and carry out self-assessment should be welcomed. These include: programmed learning texts with their built-in self-assessed question-and-answer, and multiple-choice tests with rapid correction, particularly when used in conjunction with a computer.

It is important to remember that all these techniques can draw on the vast store of learner-recall material available, as already described, in books, print, audio and video-tape, and film. The heavy investment of time, effort, and money required to produce much of this material could be offset if there were to be widespread exchange between institutions, as already happens with books and journals: the technical means of storage and distribution makes this convenient.

Thus the library, with its existing expertise, has a new key role to play: it must be involved with the problems of selection and incorporation of the new material, and its availability and display for the learner, preferably from the planning stage of any course. In this system, therefore, we must now include links from the library and the educational

services to external sources of this new form of scholarly and instructional material. (For example, the Council for Educational Technology has set up HELPIS — Higher Education Learning Programmes Information Service — which issues regular catalogues of materials made in universities and colleges).

The teacher remains the keystone of the system. Primarily, it is his task to devise the strategy, write the course and assemble the associated material in collaboration with his educational services colleagues, and the librarians. When self-instruction is more widespread the academic staff will be predominantly tutors, rather than remain mainly the source of information for large groups in the lecture room. There will have to be a reallocation of staff effort, since so much more time may have to be devoted to preparing and producing material, but probably very much less on repeating its transmission.

A global approach to resource allocation

The contribution of the library and the educational services to the production, access and display, of this new form of tutorial work warrants a particular budgetary allocation, as a learning resource. The vague chant of "support for the library" should thus be replaced by some quantified costs for undergraduate learning related to courses: this could include books, display, subject tutors within the library — any resource needed for the learning system. (The remaining budget for research, for collections etc. is a matter for a different judgement and basis of assessment).

The educational services should include "course consultants" who can collaborate with the teachers in curriculum development, course structures, techniques, and assessment. In place of competition for funds we should consider how best to finance the shared responsibility of all three for providing the best learning situation.

Learning is indivisible. The functional and financial partnership pleaded for here could make much more effective use of existing resources, and could avoid the unfortunate divisive effects which can follow from the competitive claims for finance put forward in isolation by teaching departments, the library and the educational services unit.

Innovation in teaching and learning in conventional institutions of higher education

by M. ERAUT, Centre for Educational Technology, with the assistance of N. MacKENZIE, School of Education, University of Sussex.

Introduction

Innovation is a notoriously slow and uncertain process; and even when many people are convinced that innovation of some sort is required they may still be in considerable doubt as to what sort of innovation it should be. Moreover, academic faculty are intensely suspicious, and not without good cause, of those who "know" the exact direction in which they "ought" to go. Though we may all agree that innovation in teaching and learning needs to become more widespread in higher education, we are equally concerned that it should be relevant to the major problems of each individual institution.

Since the needs, goals and resources of institutions of higher education vary widely this precludes the type of discussion which starts with a common problem, assumes common constraints and ends up with suggesting a common "solution". Nor would a mere catalogue of new teaching methods and techniques be very helpful as this information is readily available in the literature. Instead we have chosen to examine the process of innovation itself and mechanisms by which it might be both promoted and controlled. What are the problems of innovation? What sort of policy should an institution have for innovation in teaching and learning? What should be the role of the various support services

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now mushrooming in institutions of higher education and ranging in complexity from an advisory service on designing new courses to a television unit or a slide production service? To this discussion we bring both the insights and the prejudices that arise from operating a consultancy support service for seven years, and discussing the problems of innovation with colleagues from other institutions of higher education.

Constraints on innovation

Let us start by examining some of the constraints on innovations in teaching and learning which form part of the general context of higher education. All the following constraints are significant barriers to innovation in higher education and strategies which seek to ignore them (or banish them by wishful thinking) are unlikely to yield long-term benefits.

No dissatisfaction with the present solution. Unless a teacher perceives some discrepancy between his goals and his achievements, he is bound to regard innovation as undesirable and unnecessary; and the extent to which his expressed dissatisfaction is fundamental or trivial will determine the extent to which he is likely to entertain innovation. If a teacher does not have a problem, innovation will seem irrelevant. Dissatisfaction is most likely to arise from his criticism of his goals, from his assessment of student course-work and examinations or from his perceptions of the climate of opinion about his teaching, both faculty opinion and student opinion. It is less likely to arise from being made aware of "better" alternatives as there is no perceived need for anything "better". In this context the "teaching climate" of the institution is of considerable importance, and the presence or absence of support services except in so far as they influence that climate, relatively unimportant.

No priority given to teaching and learning. It is a commonplace belief that the teaching role is considered relatively unimportant by many members of faculty and almost totally ignored when making appointments and promotions. When this is actually the case, the rewards of innovation are wholly intrinsic; and the common perception of innovation in such circumstances is that it means spending significantly *more* time on teaching and hence *less* time on research and administration.

Few resources are directed specifically to innovations. The existence of support services such as the "high activity" centres for educational technology supported by the University Grants Committee in the UK could be construed as a sign that some resources are being directed specifically to innovation. But the provision of educational technologists for this purpose is not sufficient. Far more faculty time is needed than educational technologist time. Since it is likely that faculty will only rarely be willing to spend significantly more time on teaching, time for innovation has to come from a reallocation of existing teaching resources.

Little guidance on how to develop profitable innovations. A teacher needs to solve his own problems on his own terms, but often has very little idea of how to proceed. Many teachers have wasted time on relatively unsuccessful innovations because they have lacked appropriate guidance; often they have never adequately defined the real nature of their problems. These abortive attempts at innovations have helped promote a climate of opinion which believes that little improvement is possible and all would-be innovators are "false prophets". Many regard these "inoculations" against innovation as necessary maturation experiences for university teachers.

Ignorance about possible innovations. There is undoubtedly considerable ignorance about new methods of teaching and learning, about the research literature on new and old methods, and about innovations in other universities and in other parts of the same university. This is certainly a barrier to innovation though its significance is possibly overrated. Is there any point, for example, in disseminating information to people who remain perfectly satisfied with the existing situation?

From this discussion of the problem of innovation we can conclude that there are three main factors which affect the likelihood of successful innovation in teaching and learning taking place:

— The teaching climate of the institution, i.e. the attitudes of faculty, students and administrators;

— The allocation of resources specifically for innovation, particularly the provision of release time for faculty to develop innovations;

— Provision of appropriate support services.

Changing the teaching climate

The teaching climate of an institution is difficult to describe and even more difficult to change. But it is worth examining some of the factors which must

inevitably affect it. The first is the institution's policy, or rather its normative practice, for appointments and promotions (1). Seen at its worst it is not uncommon in universities for teaching either as a responsibility or as an area of concern to be omitted from all advertisements, interviews and discussions. It would be both impracticable and undesirable to try and attach any specific weighting to reported or even observed teaching ability, but to give one of the members of the committee concerned a specific responsibility for raising the issue would not seem unreasonable.

A second factor is the extent to which teaching and learning are a normal part of ongoing departmental and university discussions about problems and issues. This is the responsibility of the professor or dean, who not only can see that teaching is discussed but also can set the whole tone of the discussion. But even when he is willing to fulfil this role the task of ensuring a productive rather than a trivial or recriminatory discussion is not easy and often goes by default. It is an area where advice from an experienced consultant could be helpful, but we shall return to this later. There is no use just discussing a problem unless the discussants have some notion as to what appropriate actions might be possible and some conviction that decisions will be taken seriously and properly implemented.

The third factor, which is of growing importance, is the participation of students in discussions on teaching and learning. Student involvement can certainly increase the chances of teaching coming onto the agenda and of discussion leading to action, but it does not of itself ensure that the discussion will be productive. Mere complaints about teaching usually give rise to defensive reactions; and it requires a certain degree of mutual trust between faculty and students before problems of both teaching *and* learning can be discussed together. The teaching climate is both influenced by and has an influence on the general institutional climate and the nature of the relationships between students and the faculty.

Then finally the climate can be affected by some clear indication from the administration that it attaches importance to the teaching function. Firstly it has to build this attitude into the committee structure; and we shall be discussing the role of teaching and learning committees later. And secondly it has to provide resources for the development and improvement of teaching and learning.

Allocation of resources for teaching and learning

Until very recently the allocation of resources specifically for innovation in teaching and learning was confined to the provision of support services. They were principally in the area of educational technology; and they were justified by the potential for cost-reduction and by appealing to modernity. This policy reflected the views of the 1960s but experience has shown that it has a number of serious disadvantages (2):

— It has very little effect on the "teaching climate" of the institution.

— It tends to transfer the responsibility for innovation away from the faculty themselves and onto the support services, who may often find themselves being ignored and blamed for lack of impact at the same time.

— It underestimates the amount of extra work involved for members of the faculty.

— Since much of their concern with teaching is inevitably "second-hand", the links between support services and students can be very tenuous indeed.

— It creates a situation in which there are "solutions" looking for problems, rather than the reverse.

— The pattern of innovation is inevitably random and spasmodic and there is little guarantee of it having any relevance to the main problems and needs of the institution.

The need for faculty release time

A number of these disadvantages can be overcome if a wider range of support services are encouraged (we shall return to this later) and if at least equi-

(1) Jones, H. C.: "The management of teaching" in J. Fielden and G. Lockwood (eds) *Planning and management in universities: a study of British universities*. Chatto and Windus for Sussex University Press, 1973. Reprinted in *British Journal of Educational Technology* Vol. 3, pp 199—214, 1972.

(2) Mackenzie, N., Eraut, M. R. and Jones, H. C.: *Teaching and Learning: New Methods and Resources in Higher Education*. UNESCO and the International Association of Universities, Paris, 1970. 209 pp.

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valent funds are allocated specifically for faculty release time. It is not realistic to expect a member of faculty to sacrifice his research but it is possible to reallocate teaching resources so that this extra time for the development of innovations in teaching and learning comes at the expense of a slight worsening in the effective teacher-student ratio (3). After all, the evidence on the Hawthorne effect, which is the least one can expect from innovation, is a good deal more conclusive than that on class size! It is also possible, particularly in the sciences, to employ a research fellow or research assistant who might both undertake some teaching and maintain if not even strengthen a group's research output.

The provision of release time could also have a significant effect on the climate of the institution. It gives official recognition to innovation in teaching, and is also likely to encourage publication of the work and hence confer extra status upon it. This depends, of course, on the time being used in a properly professional way; and for someone both inexperienced and untrained for this kind of activity there can be no guarantee of this. Again the role of the support services could be important. There is a danger, however, of creating a separate, and inevitably lower status, class of academic who studies the teaching problems while the others get on with their research with a free conscience. To avoid this danger it is essential that the released person involves and consults his colleagues throughout rather than tries to make it on his own, even if it is at the expense of "productivity".

This highlights the fundamental test of an innovation strategy. Does it effectively locate the responsibility for innovation with the main body of faculty; or does it relieve them of the "burden" by locating the responsibility either with support services or with some non-representative group of faculty, who have been "foolish" enough to risk their careers by applying their talents to problems of teaching and learning? The provision of release time is a necessary but not a sufficient condition for passing this test.

Provision and functions of support services

Three distinctive functions for support services are now discernable in current practice, the improvement of teaching skills, the development of resources for learning, and assistance with the design and evaluation of courses.

The improvement of teaching skills

The first of these, the improvement of teaching skills, is concerned with the teacher in his actor/presenter role. Traditionally this took two forms; exhortation to use visual aids and assistance with their production; and provision of checklists of "do's" and "don'ts" for lecturing, tutoring, discussion leading, etc. These tasks are by no means redundant although the strategy of performing them by lecturing or by circulating printed documents has proved markedly unsuccessful. There is evidence that visual aids are still ignored by large numbers of teachers and that many of the most elementary performance rules are broken every day. The reason, one suspects, is not lack of information but lack of motivation; and for that we must look not to the support services but to the teaching climate.

In any case the "inform and exhort" approach to the improvement of teaching skills has been superseded technologically by the use of portable closed circuit television. Now instead of being lectured about the inefficiency of lectures you can see them on television or even record your own. This has been refined still further in the approach called microteaching in which a teacher can practise a few minutes teaching on a small group of students, hear his recorded performance, try again with another group of students and so on, usually concentrating on one specific teaching skill, e.g. questioning, at a time (4). As normally practised this approach has two major drawbacks: it tends to concentrate on technical skills and to ignore the semantic and subject-specific elements in teaching; and it sets up the consultant as the definer of what constitutes "good" teaching rather than another teacher or a student, thus isolating him from his clients and forcing him into the role of expert rather than that of consultant. Both these disadvantages have the effect of separating off general educational expertise from subject-specific expertise and make it easier to reject the consultant as not knowing the subject. Our own experience lends us to believe that a crucial factor in innovation is the complementing of general pedagogic expertise and experience with that possessed by good subject teachers; and that it is neither strategically desirable nor even theoretically valid to expect a general consultant to solve

(3) Jones, H. C.: Op. Cit.

(4) Allan, D. W. and Ryan, K. A.: *Microteaching*. Addison-Wesley, Reading, Mass., 1969. 151 pp.

subject-specific problems on his own. One way round these difficulties is to try and involve groups of teachers in observing and helping each other; and also, if possible, to get students to say what *they* thought was going on. But this is more demanding of time and effort.

Undoubtedly the recording and review of teaching performance can contribute to the improvement of teaching skills and is an important function for support services to perform. But nevertheless it has yet to be seen whether the greater glamour of this quasi-therapeutic experience will entice more than a minority of teachers.

The development of resources for learning

Those who lacked faith in "changing human nature" looked to improvements of a more technological kind and set up support services to develop alternative resources for learning ([5]). Some who talked of giving the exceptional teacher a wider audience and of cutting costs have emphasised the potential of mass media, particularly television; and others who talked of changing the emphasis from teaching to learning and of adapting to the needs of individual students have emphasised first programmed learning and then other forms of independent study, such as the audiotutorial approach, the Keller plan ([6]) and modularised instruction ([7]), to list them in historical order. But experience with both approaches has led to similar conclusions:

— The faculty time required in developing new resources is considerable and unlikely to be donated by all but a few enthusiasts unless there is provision for release time (see above).

— The development of new resources is far more profitable when pursued as part of the design or redesign of a whole course.

— Improvements are much more likely to be qualitative than quantitative.

— The teacher's role is changed but not diminished. He is more likely to function as a tutor and counsellor and less likely to function as an actor/presenter.

More recently this kind of work has been given enormous impetus by the open university which has been able to invest in learning resources on an appropriate scale, but we have yet to see whether in the end conventional universities in the United Kingdom will move more towards the open university pattern or whether the open university itself will become more conventional as the traditional academic pressures on its faculty grow with time. It is, however, our belief that the potential of new resources for learning is only beginning to be explored. Materials of quality may as yet be exceedingly scarce, but there could be many more in the future if the investment is made and if the proponents of alternative learning resources survive the double hazard of the sceptics and the enthusiasts.

Course design and evaluation

"Teaching methods units" were originally set up to provide the first support function, the improvement of teaching skills; and "Educational technology units" were set up to provide the second, the development of learning resources. Both have tended to overlap into each other's territory, often because only one of them actually existed in the institution concerned; and both have gradually assumed the third support function, that of assistance with the design and evaluation of courses ([8]). This third support area is much more controversial than the other two because it encroaches on traditional academic preserves and is therefore far more threatening. It also lacks an accepted body of educational knowledge which might make the consultant's claim to be useful more convincing; and it relies even more than the other functions on the allocation of substantial faculty time to planning and evaluation. Why then have the support services chosen to invade such difficult and potentially unrewarding territory? Because to ignore it would make a nonsense of their other activities. What, after all, is the purpose of helping someone to improve a lecture when the students might be learning better from a book; and how can one design and evaluate resources for learning without first clarifying the aims of the course? The selection of appropriate methods must surely be as important as the improvement of them, but the change, being more radical, is far more difficult to accomplish.

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(5) Mackenzie, N., Eraut, M. R. and Jones, H. C.: Op. cit.

(6) Elton, L. R. B. et al: "Teach yourself paradigm — the Keller plan". *Chemistry in Britain, 9*, p. 164, April 1973.

(7) Creager, J. G. and Murray, D. L. (eds): *The use of modules in college biology teaching*. Commission on Undergraduate Education in the Biological Sciences, The American Institute of Biological Sciences. 1971, and Goldschmid, B. and Goldschmid, M. L.: "Modular instruction in higher education: A Review", *Higher Education* Vol. 2 (1973) pp 15—32.

(8) Beard, R.: *Teaching and Learning in Higher Education*. Penguin, 1970. Also MacKenzie, N., Eraut, M. R. and Jones, H. C.: op. cit.

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Further difficulties

An innovation strategy which was aimed at all three of these critical factors — the teaching climate, faculty release time and support services — was being publicly advocated by 1970; and by now it would probably receive widespread support from those engaged in the support services, and even from official bodies such as the University Grants Committee (9). In spite of still being very far from the normative practice it must be close to becoming the "conventional wisdom". Nevertheless it does have serious weaknesses, some of which we have already hinted at. These include the relative isolation of support services from teachers and students, the difficulty of evaluating an innovation's success, the scanty attention paid to problem diagnosis and the tendency to concentrate on problems which conform to readily available solution paradigms. We shall consider each of these problems in turn before proceeding to consider a modified strategy which attempts to take them into account.

Relative isolation of support services

The support services will always be somewhat isolated from teachers and students because they serve a different function; but reducing the degree of isolation should be an important part of any innovation strategy. One approach is to plan for a greater overlap of functions giving support service consultants at least a minor teaching role and appropriately skilled and experienced members of faculty a consultancy role. Another is to increase the level of informal contact between consultants and faculty and, if possible, students. But even a strong emphasis on maintaining contacts of all kinds and at all levels will be of little use if there is intellectual isolation. What is sometimes disparagingly referred to as a "jargon gap" can be symptomatic of something much deeper: differing views on both the nature and the validity of educational expertise. At one extreme there are those who regard educational knowledge as narrow in scope but high in validity; there are one or two ways of giving a good lecture or a good lesson and all you have to do is to learn them. Teacher training should consist solely of taking subject experts and giving them a crash course on teaching methods. Then at another extreme there are those who regard educational knowledge as wide in scope and high in validity. Such people usually see themselves as a cross between a behavioural psychologist and a systems engineer; and for them a member of faculty is solely a subject expert to be interviewed, never a teacher to be consulted. Indeed they find it inconceivable that teachers should have any important knowledge to contribute to the subject of teaching and learning. Then thirdly there are those who, like ourselves, regard educational knowledge as wide in scope but low in validity. As educational technologists we have come to support Galbraith's statement that "technology means the systematic application of scientific and other organised knowledge to practical tasks" (10); but remain somewhat doubtful as to how much scientific and other organised knowledge actually exists in the field of education. Whereas the narrow scope, high validity view locates nearly all relevant expertise with the subject specialist and the wide scope, high validity view locates virtually all the expertise with the consultant, we believe in the concept of complementary expertise. Although it is possible for subject specialists to solve teaching problems solely on the basis of their own knowledge and experience and that of their colleagues, it is also possible that they will benefit from the additional knowledge and experience of a consultant. This position of complementary expertise is quite difficult to maintain in practice, because the divide between a consultant who cannot solve problems on his own, without faculty participation and assistance, and a consultant who is no use at all can sometimes appear dangerously narrow.

Difficulty of evaluating innovations

The problem of evaluation is also a significant one, and again there are two extremes. One extreme, the tendency to regard the mere existence of a change as an indicator of an improvement, is particularly tempting for support services as it makes it so much easier for them to justify their existence. The fact that a member of faculty has decided to show some films or consulted an educational technologist does not in itself indicate that any improvement in teaching has taken place. Any attempt to regard such activities as aims in themselves will tend to lead to a concentration on marginal changes which are easy to make at the expense of more fundamental innovations which take longer to achieve. This is particularly dangerous when refinement of the existing pattern of teaching and learning hinders the development of a new and more desirable pattern.

(9) University grants committee. *Annual Survey for Academic Year 1970-1* HMSO 1972. Appendix IV.

(10) Galbraith, J. K.: *The new industrial state*. Penguin, 1968.

This same problem of marginal versus insignificant change arises with the opposite position: the demand for unambiguous quantitative indicators of success. It is only possible to get purely quantitative indicators of success if the following conditions apply:

— the objectives of the course are unchanged;

— the assessment pattern is unchanged;

— there is no mismatch between the intentions of the faculty and the assessment;

— the student intake is unchanged;

— the course context is unchanged.

These conditions are rarely met in practice. But the alternative, which is to set up a controlled experiment, is not popular with faculty or students. Nor is it free from similar methodological problems as we have indicated elsewhere ([11]). The evaluation of an innovation must necessarily involve both quantitative and qualitative components as well as personal value judgements ([12]). But there is very little evidence of this kind of evaluation being met in practice on any significant scale, partly one presumes because of lack of training and partly because of lack of resources.

Overlooking the real problem and searching for the easiest solutions

The last two difficulties listed above are closely related: the scanty attention paid to problem diagnosis; and the tendency to concentrate on problems which conform to readily available solution paradigms. When resources are scarce few people want to "waste" them on preliminary investigations which have no obvious and immediate pay-off. So the strategy we have been discussing inevitably leads to a concentration of the available resources on development work, i.e. problem solution, without pausing to consider whether it is the real problem that is being tackled or merely some of its more obvious symptoms. Since there is a similar reluctance to "squander" resources on evaluation a mistaken diagnosis of a problem can take a long time to become apparent. The tendency to concentrate on readily available paradigms for tackling teaching problems has the same origin, the urge to get on with the job. Moreover it is magnified by the fact that these paradigms often form part of the expertise which the consultant brings to the situation; and he is also tempted to seek out and define problems in such a way that his own knowledge and experience is clearly perceived as relevant, a tendency that is reinforced by the marginal and insecure nature of his job.

A modified strategy incorporating a problem-oriented approach

We stated earlier that innovation is unlikely to occur unless there is some awareness of a problem; but we omitted to point out that the obvious corollary of this axiom is false. When innovation does occur it is not necessarily related to the nature of the problem in any direct and logical way. As we implied when discussing the neglect of proper problem diagnosis, problem awareness can easily lead to hasty innovation without any useful investigation of the nature of the problem. This mismatch between innovations and problems is encouraged by their entirely separate treatment in the literature of higher education. If this paper had been entitled "Innovations in teaching and learning" a typical set of headings would probably have included the following: microteaching, project work, continuous assessment, course development, group study, television, simulations, Keller plan courses, etc. But if we compare this list with a list of problems such as that drawn up below, there is no obvious one-to-one correspondence:

— Student difficulties in working independently;

— Lack of interaction in tutorials;

— High drop-out rate;

— Students feel formal workload gives no time for independent thought;

— Students do not discuss work with each other;

— Students perceive curriculum as "irrelevant" or "ideologically biased";

— Use of source material is insufficiently critical;

— Examinations show lack of understanding of important concepts;

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(11) Mackenzie, N., Eraut, M. R. and Jones, H. C.: op. cit.

(12) Eraut, M. R.: "Strategies for the evaluation of curriculum materials" in K. Austwick and N. D. C. Harris (eds) *Aspects of educational technology VI*. Pitman, 1972. Parlett, M.: "Evaluating innovations in teaching", in H. J. Butcher and E. Rudd (eds), *Contemporary problems in higher education*. McGraw Hill, 1972. Stake, R. E.: "The countenance of educational evaluation", *Teachers College Record* 68 (7) p. 533. April 1967.

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— Insufficient attention to problems of individual students;

— Lectures dull or difficult to understand;

— Unnecessary peaking of demands on library for certain books;

— First-year courses take insufficient account of different student knowledge;

— Weaker students are harassed rather than educated;

— Courses are unrelated to each other;

— Discussion in seminars tends to be random and inconsequential;

— Insufficient use of literature.

A list of innovations merely gives the latest additions to a continually expanding repertoire of ideas and techniques whose relevance to any particular problem is unlikely to become apparent until the nature of the problem has been fully explored; and even then one would not be surprised if most of the problems were tackled without involving any of the typical "conference list" of innovations. So instead of approaching consultancy situations with a pocket-book of innovations and a budget aimed solely at providing resources for development work, we are attempting to evolve a problem-oriented strategy.

Our model distinguishes five stages: Problem Awareness, Problem Diagnosis, Problem Study, Problem Attack and Evaluation; and two main types of activity: formal activities such as survey research, studying and contributing to the literature, committee proposals, training and liaison with other institutions; and less formally organised discussion and consultancy. Each stage, except possibly the first, might be delegated to a task group responsible both to the institution's main teaching and learning committee and to the academic area involved. This group would contain faculty from the academic area concerned, students and consultants, the consultancy role being assumed by other members of academic faculty as well as people from the support services. It would also be able to use both the release time of members of faculty and the time of research assistants, provided that they had been appropriately anticipated in the budget. Thus some members of the task group would only have a discussant role but others would have a working role as well.

The total budget for this process would be under the control of the institution's teaching and learning committee; and they would be responsible both for setting up the task groups and for deciding which problems should be given priority. In addition they would receive the annual reports of support service units, and would be able to call on them for people to man the task groups. Other functions might include co-ordinating information, discussing those aspects of university policy which affected teaching and learning, and a special responsibility for stimulating problem awareness. This last function is probably the most difficult of all. Our own experience would suggest that it needs to be planned on a separate basis for each school, faculty or department; and that a mixed strategy might be useful. This could include both problem scanning, using the available sources of information (such as faculty experience, student criticisms, assessment results, exploratory interviews, and reports of problems elsewhere) on a regular and organised basis; and the consideration of detailed reports of possibly relevant innovations in neighbouring departments or in similar departments in other institutions. But even this strategy will ultimately depend for its success on the teaching climate, which is where we first came in.

The role of open universities in the reform of higher education

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A notable weakness of those bred on Oxford philosophy in the nineteen fifties was said to be that they rarely progressed beyond seeking an acceptable definition of terms, even more rarely finding one. Faced by this title, I hope for forgiveness if initially I revert to type. Every phrase in it seems to require scrutiny, and scrutiny may be of future value; the current international enthusiasm for "openness" in education, sparked off not least by the British Open University, is not always paralleled by rigour in the examination of objectives or of the alternative means of achieving them. Even the words "the role of" are disturbing, since there is no indication of whether it might be an active or proselytising role, or merely passive and exemplary. But I shall leave that aside, turning to more fundamental doubts.

The objectives of reform

Let us assume for a moment that we know what is meant by "higher education", and ask instead what is the purpose, what are the objectives, of seeking to "reform" it. One set of purposes might be simply to disseminate more widely throughout the population a common culture, or a variety of alternative cultures, or to raise the general educational level, as ends in themselves and not because the process was believed to have further desirable economic consequences. Alternatively, the objective might be to attune the higher education system more precisely to the perceived manpower needs of society. This seems to be part of what is meant by the phrase "social responsiveness" (1) and it is an objective which has underlain recent attempts in many countries to reform higher education by the creation of new (normally non-university) institutions — the polytechnics in Britain, the Instituts Universitares de Technologie in France or the Colleges of Advanced Arts and Technology in Ontario (2). The establishment of "open university" systems is neutral as between such objectives; it can conduce to the achievement of either alternative. The precise systems adopted may not of course be neutral. The British Open University system, with its present degree structure, and its present configuration of teaching methods, is not well-suited to the production of highly qualified technical manpower (3); but that feature is not inherent in "open university" systems per se.

Another objective of reform may be, not simply to teach more students to the same level, but to teach them at a lower unit cost. Cost savings without loss of quality in teaching, and perhaps in learning *within the subject of study* (whatever be one's view of the value of extra-curricular learning experience in traditional higher education) (4), can come from the concentration of large groups on the same course in a single institution, from home-based study even if at a traditional institution, and above all from the substitution of

(1) C.A.R. Crosland then Secretary of State, suggested in his speech at Woolwich Polytechnic in April 1965 (a speech heralding the establishment of the British polytechnics) that a substantial part of the higher education system should be "directly responsive to social needs". The concept of social responsiveness seems to me fuzzy and very difficult to use as a guide to policy determination; see Fowler, G. T.: *Relations between the structures of higher education and the service functions* in the proceedings of the Semaine de Bruges 1973 (to be published by the College of Europe 1974).

(2) Cf. *Towards new structures of post-secondary education* (1971); *Short-cycle higher education* (1973); *Les étudiants des instituts universitaires de technologie en France* (1973); *New college systems in Canada* (1973), all published by OECD, Paris.

(3) Students are allowed a very wide choice of studies within the framework of the 6 "credits" they require for a degree, and the 8 for a degree with honours. Few may cover all of the material held to be the prerequisite of specific professional certification. At the same time the use of "distance" teaching methods, while permitting some practical work (the Open University has developed with success home experiment kits for some scientific studies), may always be less suited to it than face-to-face teaching in the conventional laboratory or workshop.

(4) It has sometimes been a charge against the Open University that its system does not allow that fruitful cross-fertilisation of student minds held to be an essential feature of traditional universities, but the University takes no steps to examine or experiment with this possibility. No evidence is required that the student is not a trappist. The argument equally undervalues the very difficult interaction of Open University and other part-time students with their own work, leisure, and home environment.

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part-time for full-time study, obviating economic loss through foregone earnings and productions (5). Large groups on common courses, home-based students, and part-time study are all features of the British Open University. The combination of all three features is not however a necessary concomitant of its teaching system, since the average size of learning groups depends upon the number of courses offered as well as the number of students enrolled. In countries with a small population a wide academic base in "open" teaching might on this system suffer from marked diseconomies (6). Nor is any one feature alone unique to "open university" systems. If then this is the principal objective of reform, precise calculation of the balance of advantage is required before any decision to opt for one pattern of expansion.

We are then left with egalitarian objectives for reform. The objective, within an expansionist policy, may be the admission of a higher proportion of students from hitherto "disadvantaged" or "under-represented" groups. Although there are familiar problems of definition here, this can be subsumed under the traditional aim of seeking greater equality of opportunity. A difficulty to which we shall return stems from the incidence of drop-out of the "disadvantaged" at particular levels of education. It may be argued that the problem must be solved, if it can be solved within the education system at all, at nursery, primary, and secondary levels, rather than by adapting the structure of higher education (7). If, however, we adopt the objective, not of equality of opportunity, but of average equality of *achievement* by the members of racial and social groups, then it may appear quite impossible of attainment by even the "reform" of the whole education system, let alone of higher education (8). "Open universities" may do something to redress the balance, but their potential is limited.

Possible institutional patterns

The objectives of reform may help to determine the *institutional pattern* of "open university" chosen. There seem to be three possibilities:

— an "open university" as a single comprehensive institution subsuming traditional as well as innovatory modes of study;

— an "open university" as an *alternative* to traditional institutions, for all student age-groups;

— an "open unversity" as a *compensatory* institution, catering for those who failed to take up or never had a chance of admission to traditional institutions.

The first pattern, whatever be seen as its disadvantages, offers the greatest flexibility, and hence perhaps the greatest economies, not least in the use of teaching expertise — to which we shall return presently. The second with the application of a "numerus clausus" to admission to "non-open" institutions, may serve more than one objective. For example, let us assume that in Britain expansion of traditional universities was halted (9), and the polytechnics and former colleges of education were permitted to begin new courses only if they were vocational, and fitted a national estimate of manpower requirements. If demand for higher education continued to expand on historic lines, an increasingly high proportion of arts and social science applicants would be driven to the "open" sector. Even without such a rigorous admissions policy, changes in student grants — relatively less to the full-time residential student, relatively more to the part-time home-based student — could have a similar effect in the distribution of students between sectors, if not between disciplines. The third pattern, modified

(5) For an early study of the economics of the Open University showing the importance of this factor, see Wagner, L., in *Higher education*, Vol I, No 2, 1972, reprinted in *Decision-making in British education*, ed. Fowler, Morris, Ozga. Heinemann, London, 1973, p 338.

(6) There is a continuing debate within the Open University as to how wide its academic spread should be. The economies of the operation feature prominently in the arguments advanced for restricting its coverage. Note above all the effect of using scarce national broadcasting time to teach very small student groups.

(7) Despite the expansion of absolute numbers in European higher education, and some improvement in the percentage of students in the system as a whole who come from the lower socio-economic groups, the proportion of students in universities specifically who come from these groups remains in most countries obstinately constant. This is the clearest evidence that many potential students from these groups are "cooled out" of the system at earlier stages.

(8) This would seem the proper conclusion from the American evidence, especially the Coleman report, *Equal educational opportunity*, Washington DC, 1966, even though Coleman himself proposed average equality of achievement as the only acceptable definition of equal opportunity.

(9) The rate of expansion proposed in the 1972 White Paper, *Education — a framework for expansion*, HMSO, Cmnd 5174, was much lower than that obtaining in the 1960s, and greater weight was placed on the expansion of the non-university sector.

only by the 1972 decision to admit a small number of eighteen-year-olds, is that of the British Open University, designed as a "second chance" institution for those aged over twenty-one. It alone, as an *institutional pattern*, has a clear egalitarian objective [10], although institutions within either of the other two patterns could of course embody such an objective in their admissions policies. On the other hand, it had in its original conception nothing at all to do with economy, however low its unit cost per student or per successful student, since it was an addition to existing provision and its planned development. It had precious little to do with the supply of specific categories of highly qualified manpower either.

The concept of "openness"

So far we have spoken as if we all knew what was open about "open universities". Openness is however a multi-faceted concept. It may be broken down into the following categories and subcategories, which are not intended to be either exclusive or exhaustive.

— *Openness of access*

- "neutral" open access in which anyone may register as a student irrespective of prior study or qualification, but the initiative in registering lies entirely with him or her.
- restricted neutral open access, in which all may also apply, but there may be limitations on acceptance related not, or not directly, to prior study or qualification, but to the total number of new students acceptable in any year, the balance of enrolments between courses, and perhaps between regions of the country or other area covered. This is in essence the British Open University policy on access [11].
- "positive" open access, in which strenuous efforts are made by the institution to recruit students from selected racial or social groups. This was a policy instituted for some programmes by the City University of New York in 1970.
- open access for non-registered students to all or some of the teaching provided. Anyone in Britain can watch Open University television programmes or listen to radio broadcasts, if they can with difficulty discover when to switch on, and anyone can buy its correspondence texts and set books, always assuming they can afford them. They cannot however readily obtain the Supplementary Material which helps make sense of the broadcast transmissions and contains other learning aids, they cannot receive any face-to-face tuition, nor can they earn any credit towards a degree or other award without registering [12].

— Openness in *mode of learning*

- in the location of learning, which may be wholly home-based; primarily home-based but with a compulsory or optional study-centre component; a study-centre being situated within an hour or two's travel time of all students; primarily home-based but with compulsory or optional 'on-campus' study [13]; or alternatively may be wholly or primarily 'on-campus' or within the study-centre or even work-based. The British Open University system is home-based, with optional attendance at study-centres, and brief compulsory 'on-campus' periods at summer schools.
- in the permitted period of learning, which may be non-restricted as to the attainment of the final award, or of a 'credit' or 'credit point' counting towards it, or both. The Open University is in essence unrestricted in both senses.
- in the required form of learning experience, which could include what some call 'life experience' as the sole requirement, or may, through registration and payment, demand at least the pretence of receiving the prescribed teaching. It should be noted that

(10) Inter-generational equality of opportunity is generally a neglected area. Harold Wilson, in his speech of 1 October 1963 to the Labour Party Conference, specifically called the proposed university a "supplement" to the rest of the higher education system.

(11) The total number of students the university may register is at present (January 1974) restricted by the government to 42,000. As the number of students taking courses initially built up much faster than the number graduating and must inevitably do so, the number of new students the university can register in any year has now fallen sharply.

(12) Nevertheless, many people do seem to watch or listen to Open University broadcasts on a casual basis. It is interesting that Wilson (loc cit No. 10 above) referred to the "contribution to the cultural life of our country" which the university could make.

(13) Some American "open access" systems require on-campus study.

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some 'distance' teaching methods, with no unavoidable requirement for face-to-face contact, can never ensure that the exceptional student has ever even opened a book, nor does it matter, provided that he passes the set examinations. He or she would in the Open University have to be exceptionally gifted, learned, and arrogant, and, quite apart from the summer school requirement, remarkably prescient too, if he were to anticipate the quirks of course content upon which some assignments are based.

- in the variety of teaching technologies through which learning is stimulated, from the conventional lecture, tutorial, or seminar, through directed or programmed reading, the performance of exercises with 'feedback', the use of television and radio, video-cassettes and sound-tapes, home experimental kits, and project-work based in the student's home area, to on-the-job learning. The Open University makes formal use of all of these except the last, but relies heavily on 'distance' methods of teaching [14].

— Openness in the *permitted purpose of learning*, which may be vocational, or concerned only with the student's desire to improve his general standard of education or enhance his understanding of the common culture, or to enable him to contribute to the development of a group or community to which he belongs, or take any one of a thousand ways to "self-fulfilment". In a sense, the university has no ultimate control over its students' aims in registering, but quite apart from the effects of the counselling or guidance it offers to students or potential students, the programmes it mounts and permits may manifest conscious or unconscious bias. At one extreme the university may have "free programmes" in which the student, albeit with guidance and subject to approval for credit, devises his own learning objectives and pattern [15]. At the other, the student may have to choose between a limited number of courses mounted by the university, many of which may have little direct relevance to the vocational, community or personal ambitions of applicants, but reflect the belief of academics in the value of learning for its own sake.

— Openness in *age of student entry*, which could have a lower age-limit or an upper, or both. The British Open University had an original lower limit of 21, since reduced to 18 for 500 students a year, and no upper limit, thus making some contribution to the mitigation of intergenerational inequality in education — a form of inequality often neglected [16].

— Openness in *area of permitted student registration*, which might have no limits save those imposed by mutual linguistic incomprehension, be international but restricted, national or limited to defined areas within a country. The limits imposed stem not just from the technology adopted (for example the use of national, regional, or local television channels) and linguistic compatibility, but also from the normal difficulties in institutional and above all international collaboration. To take an example which may not be entirely imaginary, an "open" system of higher education in Belgium based on British Open University principles could only work effectively and economically if there were close co-operation between that country and its neighbours, and its institutions and theirs. The relevance of this factor to our theme is that "open" systems may factor to our theme is that "open" systems may prove a powerful force in the eradication or tempering of differing national or regional patterns of higher education, or at least for the establishment of transferability of "credit" between them. The British Open University, with its headquarters in central southern England, not only serves students in Scotland too (as well as the rest of the United Kingdom), but has organised its degrees on a pattern more akin to the Scottish than the English [17].

(14) The original intention was that it should rely entirely on "distance" teaching, but a tutorial element was inserted very early in the university's life to give students some face-to-face support. The university also provides counselling to students to help them with the special difficulties of home study and with their choice of courses. Home study demands a degree of self-reliance not always required by traditional institutions; this is a major reason why the university was very wary of lowering the age of admission from 21 to 18 except on an experimental basis for a limited number of students.

(15) As in the Empire State University experiment in New York.

(16) Open University students are in fact drawn from every age group over 21, although there is of course only a small proportion from the most elderly groups.

(17) Six "credits" are required for a degree, and eight for a degree with honours. Each "credit" should take on average about 320—340 hours of student work. Two are thus broadly the equivalent of a year's study at a conventional British university. Thus the Open University system is closely akin to the traditional Scottish university pattern, where students take three years to a degree and one more year to achieve honours.

The concept of a university

Even when we can attach a specific meaning to the word "open", we may still have to ask what is a "university". The question may seem to some to be one to which we all know the answer, even if we cannot formulate it clearly. For others it may evoke echoes of the theoretical debate from Newman onwards. My purpose in asking it is, however, merely to draw attention to problems attaching to the role of "open universities" within the total education system of one country. Even within Britain, it is not unknown for Englishmen to criticise the standard of Open University "foundation", or first year courses, and for them to be defended on the grounds that their standard is comparable to that of the first year of Scottish degrees [18]. More seriously, Tyrrell Burgess, in a well-known attack on the Open University, suggested that its failure to attract or to cater for what he regarded as the desirable proportion of working-class students was attributable primarily to its being a *university* — in the British sense of the word [19]. Burgess was not writing simply about academic standards, nor about the place of established and traditional academical disciplines in teaching as well as research, nor even about the unwillingness of the Open University to run its own preparatory courses, at below normal university level. Professor Martin Trow, of the University of California, sought to defend the Open University against his strictures [20]; but he had himself three years earlier, in expanding C. A. R. Crosland's "binary" policy, referred to "the status system of British higher education, a system of differential prestige and rewards that has strong historical roots, and is linked to and buttressed by the systems of prestige, power and wealth in the larger society" [21]. Burgess was suggesting that the mere adoption of the title "university" gave the Open University its place within these systems, orienting it towards academic standards and prestige and away from seeking to identify and meet the needs of the "disadvantaged" potential student, while at the same time alienating him from it.

(18) The starting point of university studies in Scotland has traditionally been a little lower than in England (in consequence partly of a different pattern of school leaving examinations), but the final standard is the same.

(19) *New Society*, 27 April 1972, reprinted in *Education in Great Britain and Ireland*, ed. Bell, Fowler, Little. Routledge and Kegan Paul, London, 1973, p 236.

(20) *New Society*, 4 May 1972.

(21) *Higher Education Review*, 2 (1) 1969, pp 27—43.

The predominance of the middle-class

Burgess' attack occasioned an adverse reaction within the Open University. Many members of its staff were not only dedicated to the ideal of drawing into higher education those who had hitherto "missed out", but had made personal efforts to help individual students who found difficulties with its courses. As many believed that the university should make greater efforts to recruit "working-class" students, whether through better publicity or through the trade unions. The fact remained that while precise statistics were and are hard to come by (how does one categorise "housewives" by social class?), the university's students were predominantly in middle-class occupations [22]. The Vice-Chancellor has pointed out that students of traditional universities in Britain are normally classified by their father's occupation, not their own, and that if this classification is applied to the students of the Open University, it probably has a higher proportion of "working-class" students than any British university [23]. But this is merely to demonstrate that the Open University *confirms* social movement, not that it originates it. It does not suggest that the university is making a major contribution to the achievement of more equal opportunity for the "disadvantaged", if the majority of *them* are assumed to have dropped out of education even before successfully completing a full course of secondary education, in the normal international meaning of that phrase [24]. The gap between the formal learning level of those who left school at 14 or 15 perhaps with an even lower level of learning attainment than that age would suggest, and the "foundation level" requirements of the Open University, is very wide. It is possible to detect occasional resentment

(22) The largest group of all are teachers, with a teaching certificate but no degree. This seems to be explicable by three factors: (i) teachers know of the existence of the Open University, while other groups may not; (ii) they are the only group in Britain who are paid a specific sum in addition to their normal salary if they have degree; (iii) the Open University operates a system of "credit exemptions" in respect of prior study at higher education level, which has the effect of allowing teachers to reach a degree by studying for only 3 rather than 6 credits.

(23) For the Vice-Chancellor's own account of the early years of the Open University, see his three annual reports, published by the Open University: *The early development of the Open University* (1972), *The first teaching year of the Open University* (1973), and *Report of the Vice-Chancellor* 1972 (1974).

(24) i. e. up to the age of 18 and the standard of the school leaving examination.

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at this among students with this background who have registered. But the great majority of the group seem either not to have heard of the Open University or to assume automatically that it is not for them.

Social responsibility v. academic respectability

The Open University has set its face against running its own preparatory courses of below normal higher education level, although it has given guidance to others willing to run them for it. This points to a problem with the definition of "higher education" which parallels that to be found with "university". In England it would be odd to describe a college as an "institution of higher education" unless the great bulk of its work were at a level more advanced than General Certificate of Education "A" Level. The *exit* level of some courses might be higher than this, but that is not in point. Even courses normally accounted to be "courses of higher education" may earn a suspicious glance [25]. The Open University, in its credit exemptions policy, does not recognise the whole period of study for either the Higher National Diploma or the Higher National Certificate as at higher education level, even though the *entry* point to each is the equivalent of GCE "A" Level. The total entry requirement for such courses is less than for a university degree [26]. It is interesting that the Open University, while having itself no formal entry qualification, here pays due deference to that for the degree in other universities as the only true test of work of higher education standard. No self-respecting university would undertake tuition for a qualification lower than that of the first degree (although once they did and may still, through extra-mural departments, teach for no qualification at all). Neither does the Open University [27].

(25) Many in the universities have little knowledge of courses in the public sector of education, and especially of those which postulate the ordinary national certificate or diploma (a technician qualification) as the entry requirement, rather than the General Certificate of Education, advanced level, almost universally used by the universities.

(26) As an alternative to the ONC or OND (No. 25 above), students may have 4 GCE subjects, one of them at advanced level; the university basic requirement is 5 GCE subjects with 2 at advanced level.

(27) Some other institutions in the public sector of education do run preparatory courses for potential Open University students, and the Open University itself has not finally ruled out of court the notion that it might run lower level courses.

That the Open University has neither mounted massive publicity campaigns beamed at the "working class", nor has run its own preparatory courses, are phenomena partly explicable by lack of finance. But that this is not the whole explanation is revealed by the concern of the university for academic respectability in the eyes of its university peers [28]. A perfectly proper concern that its degrees should not be adjuged inferior to others underlies this; were this to happen, its successful students would be the sufferers. Yet some living in other societies or familiar with other education systems might think that that concern has been carried to unrealistic lengths. Surely no-one would undervalue its degrees if it had built up to degree work slowly, first running preparatory and diploma courses? The answer is in part that in Britain it might have found much greater difficulty in recruiting academics able to devise degree courses if it had begun in this way; the calibre of its early recruits was a great step towards academic acceptability [29]. In part it lies in that inferior status which is accorded to those lower down the ladder wherever "the ladder concept" is applied in British higher education, and to which Crosland referred in his Woolwich speech in 1965 [30]. Of this Martin Trow wrote: "The very oddness, to the American ear, of such assertions ... hints at the profound differences which underlie our respective conceptions of higher education. And it points ... to the differing patterns of class and political relations of the two societies which shape their conceptions of education" [31].

How "open" in practice?

We are then brought back to the question of "openness". The Open University opted for a form of what I have called "neutral open access" (with now a rejection of some 50 % of applicants, largely because of an overall "numerus clausus" imposed by the government, but perhaps presenting the opportunity or the temptation of "counselling out" some would-be students, in the more popular disciplines). At the same time, it opted for great openness in the location of learning, in the permitted period of learning, and in the variety of teaching technologies through which learning is stimulated — but not in the required form of

(28) See for example the Vice-Chancellor's reports (No. 23 above) especially *The early development of the Open University*, pp 117—122.

(29) Op. cit. No. 28 above, pp 9—20.

(30) See No. 1 above.

(31) Loc. cit. No. 21 above.

learning, experience. Students are examined by a form of objective testing ("computer-marked assignments"), by essay or project work ("tutor-marked assignments"), by formal examination papers at the end of each course, and sometimes by assessment of their performance at summer school too; the combination demands a study and some mastery of the course materials provided, devaluing other forms of relevant learning, including "life experience". While some effort is made to respond to external demand for courses, most courses of the Open University have been conceived internally, by the academics; it is thus no more "open" in terms of the permitted purpose of learning than most British universities. It originally opted for total openness in the age of student entry at the upper end, but not at the lower, so that it was not in direct competition for students with other universities and could not be seen as the receptacle for their rejected applicants. Each of these choices was compatible with the early achievement of academic acceptability, provided that academic standards were and were seen to be maintained. Either the validation through examination of learning other than through study of the university's own teaching materials, or the admission of "free programmes", or a welcome to all applicants aged over 18, might have made such acceptability well-nigh impossible of attainment. "Positive open access", in the sense defined above would have made it much more difficult

The importance of institutional autonomy

Institutionally, the Open University had to be separate from other institutions of higher education and independent of direct public control. Since it was "compensatory" in conception, it must be a university, seen to be the academic equal of other universities (or as one of its progenitors called it, "the Oxbridge of the Air"). In theory, an existing university could have mothered it, developing towards the "comprehensive" concept, but none was likely to take so odd and complex a fledgeling to its bosom. In any event, such an arrangement would have had the smack of academic tutelage and of inferior status. The coincidence of autonomy and of academic respectability is one of the articles of faith of British higher education. That it is peculiarly British is apparent from the innocent suggestion of an American in an otherwise perceptive critique of the Open University [32].

He advocates the appointment of "three-quarter time" directors of study centres. Each director could be attached to the institution hosting the study centre and teach there as well as play both tutorial and counselling roles within the framework of the Open University. The university's 250 study centres are almost all on the premises of public sector, i. e. non-university, institutions. 250 joint appointments, each requiring the co-operation of one of the 122 local education authorities or their equivalents existing even after local government reorganisation [33], would not only be exceedingly difficult to arrange, but would create an indissoluble link between the Open University and the public sector. Sadly, but undoubtedly, many might see this as a mark of inferior status. To them, and they seem to include students, it is its standing as an autonomous university that is part of the Open University's attraction.

Conclusions

Despite all this, the Open University is undoubtedly already making a mark on the rest of the British education system. Its materials are becoming widely used in other institutions, notably the colleges of education; but also the universities. Their high standards stemming from the care and time which has of necessity to be put into the preparation of published material, as opposed to the ephemeral lecture or seminar, may contribute to a general improvement in teaching standards in higher education. Above all, this use, and the Open University's own system of giving "credit exemptions" for previous study at higher education level, has raised in an acute form the question of transferability of credit for study between institutions. On the one hand, double study of the same material for credit from two different institutions must be avoided. On the other, students should not have to begin again at the beginning if they change institutions, wishing to build higher level studies upon a qualification already achieved. It is as well that the Open University has raised this question, since it must in any event be solved if the proposed Diploma in Higher Education, a two-year course, is to be integrated with the traditional British degree structure, if we are to move to a comprehensive and varied, but essentially united, system of higher education and if steps

(32) Spitzberg, Irving J., Jr.: *The Open University: a critique* a report to the Institute of Current World Affairs, New York, (1972).

(33) Local government in England and Wales outside London is reorganised on 1 April 1974, and in Scotland a year later. The number of local education authorities will be sharply reduced.

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are to be taken to embody the "recurrent" principle in educational policy and practice.

The success of the Open University would have been impossible without the expertise of the British Broadcasting Corporation in the production of high quality sound and visual materials. Other countries thinking of introducing a similar system should note the very high resource cost of duplicating national broadcasting facilities and the near impossibility of generating rapidly an expertise equivalent to that resident in national broadcasting agencies.

To sum up, the role of open universities in the reform of higher education will depend upon the nature of the existing system, the type of open university developed, the objectives of reform, and the degree to which it is desired to integrate the new institution with the existing system. Lessons can only be learnt from a study of the British Open University or of the University Without Walls, or of the work of the City University of New York, if the functions and the procedures of these institutions are studied within the context of the national or state systems within which they have a place. Such a major study of open universities and their role will require the resources of a major international agency. Until it exists countries considering additions of this kind to their own educational provision would be well advised to proceed with caution.

PLANNING FOR EFFICIENCY

Planning and efficiency in higher education

by F. CARTER,
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Defining "higher education"

Perhaps it will be well to begin by defining what we are talking about, for there is, of course, no universally valid definition of "higher education". The Carnegie Commission defines it institutionally, as "academic or occupational programmes on a college or university campus or in campus substitute institutions such as the 'open university' ": distinguishing it from "further education", which comprises "quasi-academic and non-academic programmes involved in training specific skills through industry, the military and other institutions" (1). This distinction, however, is imprecise unless one can give a clear meaning to the word "academic"; and if one supposes that this word has to be defined by reference to what is commonly done in colleges and universities, the definitions become trivial. The problem is, of course, that institutions which certainly belong to higher education, such as universities, are involved in training specific skills, so that there is no possibility of a simple definition based on a distinction between general education and specific training; while skills which in some countries are taught within industry are in other countries taught by separate colleges, so that if one defines higher education as "what universities and colleges do" (for those who have left school) the definition will have a different effect in different countries.

Nevertheless, let us for the present purpose accept "what universities and colleges do" as a sufficient definition, because this institutional basis is the easiest to relate to planning at a national or state level. In all countries higher education in universities and colleges is critically dependent on government finance, even though it may include nominally private institutions with their own endowments. Therefore decisions about "how much", "how distributed", "subject to what conditions" have to be made; and these are elementary planning decisions.

(1) *Final report, 1973, p. 5.*

Complications in the concepts of "planning" and "efficiency"

One difficulty about discussing planning and efficiency is that these words are assumed to be representative of good things: that is, we automatically suppose that planning is better than chaos, and efficiency better than inefficiency.

Hence discussion has centred on problems such as the methods of planning, and the criteria by which efficiency can be judged: and it quickly becomes concerned with detail, and particularly with those details which can be related to some form of measurement, so that we can devise an index of efficiency whose value is to be maximised. Now of course I do not want to say anything against most of the elementary ways of improving efficiency by better planning of parts of the system or parts of institutions within it. For instance, one should not install heating systems which are inherently wasteful, unless it can be shown that the compensating gain from their initial cheapness is an adequate reason: one should not set the ratio of an academic to other staff at a level which causes scarce academic staff to do a lot of secretarial or technical jobs which could be done both better and more cheaply by others: one should not design a national system of higher education so that those who want two years of higher education are forced to take three. But we must not, in our attention to detail, ignore some very real complications in the concepts of "planning" and "efficiency".

These complications can be expressed in various ways:

— The planning of partial systems does not necessarily improve the overall system.

— Attention to partial measures of efficiency may lead to a loss in overall efficiency in achieving desired objects.

— Analysis based on the representation of desired objects by inadequate proxies may be misleading.

— Analysis which ignores uncertainty, and the intrusion of unexpected exogenous factors, will give the wrong answers in a system which is subject to uncertainty and unexpected intrusion.

— A tidy mechanistic analysis, though attractive to the administrative mind, will give misleading results when applied to human systems.

It is, in fact, necessary to remember Emerson's remark, "For everything you gain, you lose something else". The pursuit of good planning and high efficiency, in any context other than a properly defined total system, will lead to losses: so the words "planning" and "efficiency" are *not*, in many of their uses, to be regarded as unequivocally good. Indeed, it is customary in the Western advanced countries to recognise this, by asserting the merits of a "free enterprise system" as against the disadvantages of centrally planned economies. This does not, however, inhibit the lovers of free enterprise from engaging in detailed partial planning of an activity like education.

Objectives of the higher education system: complexity and conflict

The total system of higher education is of course part of larger systems, which transmit to it from time to time various demands and perturbations. But it has a fairly clear identity and set of purposes of its own, so it is a valid subject for analysis. This analysis should begin from a definition of objectives, and here again I call on the Carnegie Commission's final report, even though the formulation is clearly influenced by current American problems (*).

"... We believe ... the major purposes for the total system of higher education in the period ahead (to be):

Advancing the intellectual and professional capacity of individual students within a constructive campus environment;

Enhancing human capability in society at large through training, research and service;

Increasing social justice through greater equality of opportunity to obtain an advanced education;

Advancing learning for its own sake through science, scholarship, and the creative arts; and for the sake of public interest and consumption;

Evaluating society, for the benefit of its self renewal, through individual scholarship and persuasion."

This list is perhaps not complete: one might add — "Retaining for society a record and appreciation

(2) *Final report, p .26.*

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of its own past intellectual and creative achievements, so that succeeding generations may have access to these achievements."

This is not a list of 6 objectives, because the subsections are not homogeneous; there are in fact at least 16 implied objectives, such as:

— Enhancing capability through training;

— Enhancing capability through research;

— Enhancing capability through service.

These in turn are the short titles of complex groups: the second, for instance, includes both research on the true text of Beowulf and research on the secretions of the gut of the African locust. This complexity means that there are great difficulties about devising measures of performance in obtaining the objectives. Success in enhancing human capability by research on the gut of the African locust can be evaluated, at least on some qualitative scale such as Nil, Slight, Moderate, Distinguished. Success in enhancing human capability by research of *all* kinds can hardly be given any measure of performance at all, except a rough subjective judgement by an individual or committee.

The need for a balanced performance

The 16 groups of objectives conflict with each other in various ways. They are competitors for scarce resources of money or ability. This is evident as between teaching and research (even though these may *also* reinforce each other), but the same conflict arises repeatedly: for instance, expensive remedial programmes can enhance performance on "improving social justice", but their use of resources may impair performance on "advancing the capacity of students" because fewer students can be taught. An elite system (accepting only students of high ability) performs well on "advancing learning for its own sake", but at the cost of a low score for "increasing social justice". These conflicts cannot be made to disappear, and we must face up to them. What they imply is that, in addition to performance criteria for individual objectives, we shall require a concept of a desired *balance of performance* as between the objectives. For instance, the present moves in Britain to develop first degree education in polytechnics and other colleges, which do little research, rather than in universities, which operate on an assumption that a considerable part of the time of academic staff will be spent on research, correspond to a change of view in government about the desired balance of performance. The system is being asked for relatively more teaching, and relatively less research.

Let me summarise what I have just been saying thus:

Higher education is a system with multiple objectives from which a balanced performance is desired.

The operational sub-systems

Now within the total system we can distinguish various sub-systems which are different aspects of the operation of higher education, such as:

The student flow system. This has to be related on the input side to certain facts about the output from the schools, the desire to enter higher education, and the ability to jump whatever obstacles are put in the way of those desiring to enter. On the output side it requires a *partial* relation to manpower requirements: for instance, it is usual for a country to control the flow through medical education with reference to some estimate of the required number of doctors. But, since manpower estimates are subject to great uncertainty, and since many occupations call for general qualities developed in higher education rather than precise training, the output requirement provides only relatively weak conditions to guide the shape of the system. The student flow system is in many countries more influenced by the input — i.e. the numbers of students coming forward, and their choice of courses — than by the output requirement.

The staff system. The distinctive part of this is academic staff, since other grades of staff (porters, secretaries, technicians, cooks) are best considered as a small part of a national market for these occupations. But academic staff are special to universities and colleges, and furthermore the inflow is closely related to particular kinds of output (e.g. Ph. D.s) from the student flow system. Unless there are changes of quality or method, it is not possible to expand higher education more rapidly than is allowed by the inflow of teachers of required qualifications. On the other hand, since these qualifications can commonly be used in other occupations, higher education can be expanded more slowly than the available supply of teachers, or can be contracted.

The physical plant system. That is, teaching buildings, residences, equipment in laboratories and so

on. This can set limits on what can be done by the other systems; but, more usually, the utilisation of physical plant is well below the attainable maximum, so that expansion can be achieved (at some inconvenience) by more intensive use. However, within the total of physical plant there may be particular "bottlenecks" — facilities which cannot be used more fully, and therefore limit or distort other activities.

The research system. This can be conceived as having certain exogenous demands (e.g. areas of applied research which are plainly of national interest — the development of tracked hovercraft is an example): while it is also influenced by some institutional influences within higher education (e.g. the desire of Ph. D. students to find something "original" to research about), and by the motive of curiosity, which may be quite unrelated to any apparent usefulness of the research. Furthermore, the effectiveness of the research system in meeting its objectives is related to its freedom

— that is, the ability to set off in new directions in obedience to the motive of curiosity, without having to convince others that the curiosity is justified. Hence the planning of other sub-systems

— decisions about buildings, finance, manpower — may inhibit the proper working of the research sub-systems.

The finance system. This is the method, different in different countries, by which the main budgetary decisions are made. In Britain, for instance, the university system is financed by quinquennial block grants, within which institutions have virtually complete freedom to decide the balance of their activities: except that buildings are separately financed, and must be separately and individually justified. This creates a possibility of maladjustment between the physical plant system and the student, staff and research systems: a university may have budgetary freedom to expand, but no buildings to expand into, or it may have been allocated buildings but no funds to use them, or it may find itself with the wrong sort of buildings. These maladjustments have in fact often occurred.

Efficiency: the need for an overall view

Evidently these systems are interrelated; it is no use optimising one, and hoping that the rest will be able to work satisfactorily. We can say that:

The problem of efficiency in higher education is a problem of harmonious interrelation of its operational sub-systems, in relation to the desired balanced performance of the multiple objectives.

Now any actual higher education system is likely to have considerable administrative complexity: that is, it will consist of many different institutions, controlling bodies, planners. Not all the systems will be subject to an overall plan; indeed, the decentralisation of decisions may be taken a long way, because of the belief that a varied response is better in an uncertain world or because it is thought that particular activities will thrive best if allowed considerable freedom of development.

Now the British system is unsymmetrical, with an "autonomous" part, the universities, controlled mainly by money and making their own decisions about students, research and staffing levels, and a "controlled" part in which many key decisions go back to the local authorities or the Department of Education and Science. It is easy to see that, though the size of the different elements of the system can be determined at the top by the money decisions, the overall research and student flow systems will either be unplanned, or will have to be planned by the controlled part reacting to the decisions of the autonomous part. For instance, if the universities, in the exercise of their freedom, decide to provide places to train (say) accountants adequate to meet the entire national demand, the polytechnics are faced with the choice — either pull out of accountancy training, or compete with the universities and thus ensure that there will be an excess of places. The advantage thus given to the autonomous sector creates stresses, and demands that the autonomy should be removed — that there should be a national plan for accountancy education, with the universities doing an assigned share, but no more. The implications of such a plan, however, are that wisdom about the nature and scale of each course (and each piece of research) can be concentrated at the centre. Many people would deny this, and would see in the innovative freedom given to separate institutions a benefit which far outweighs the possible loss from untidy planning.

The British system in fact lies between two extremes, one in which all significant decisions about students, courses, research and staffing are centralised — and one in which only the money decision is centralised.

The former is better able to use resources economically to meet known objectives, but less well able to innovate and adapt, because adaptation involves a major change of direction at the centre. The latter produces wastes and muddles, but finds it easy to innovate: only a single institution need

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risk its reputation on the innovation, and others can join in it later if it is seen to be going well. The design of an optimum system involves a judgement about the relative importance of economy of current operation, and adaptation to an unknown future. If one believes that uncertainty is increasing ("things are changing faster than they used to") it would be logical to increase autonomy in the system.

There are many other possible deductions from the approach I have been outlining. What I have been trying to do in this paper is to persuade you of the benefits of a way of thinking, namely a study of the total system in all its aspects and in relation to all its objectives. The total system is not a machine, but a reactive organism living in a changing and uncertain world. To look at the efficiency of only part of its operation is like trying to develop the brain while the body goes sick. We have to keep before us, at all times, the idea of the whole organism, with its varied (and competing) objectives and the balance of its overall performance.

Planning higher education at the sectoral level: with special reference to higher education costs in Britain

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Introduction

This paper discusses some of the problems of planning for the higher educational system as a whole. This sectoral approach is contrasted with the growing body of studies which focus on the possibilities of securing greater efficiency in higher education by improved management at the institutional level. It is argued that some confusion is caused by the failure to recognise that sectoral and institutional planning are essentially different exercises. Institutional studies should not claim too broad a significance for their findings while sectoral studies should not exaggerate their relevance for the internal planning of particular institutions.

Section I is concerned with the general problems confronting those with responsibility for planning the expansion of higher education — the questions they must ask and the type of information required to answer them. Section II describes and presents some illustrative results from a study of university costs in the UK conducted at the Higher Education Research Unit of the London School of Economics. In Section III some general conclusions are drawn and suggestions made as to the type of data we will have to collect in the future if sectoral studies are to achieve more fully their potential usefulness.

Problems of planning higher education

A famous and widely used economic text book introduces the subject by reducing the fundamental problems of economic organisation to three simple interdependent questions: *What*? *How*? and *For Whom*? i.e. what commodities shall be produced? (and in what quantities?), how shall they be produced? (with what resources, technology etc.?), and for whom shall they be produced? (how shall the total output be distributed?). With scarce resources, the problems confronting a government department or agency (the Department of Education and Science or the University Grants Committee) with responsibility for higher education are formally similar to the economic problems of society as a whole.

If we are not prepared to let the unaided workings of the price system solve these problems, the planning agency must decide what the higher education system is to produce over the planning period (the level and mix of its outputs), how this production should be organised and who should get the benefits. Here, like the economic text book (at least until recent times), we concentrate on the first two problems, the "what" and "how" of production. The distributional problem, which in education will usually reduce to questions of differential rates of student support, is largely a political question although the assessment of the redistributive effects of alternative approaches to educational finance is the proper concern of the economist.

Speaking formally the government should produce the level, mix and distribution of educational outputs that maximises social welfare subject to its overall resource constraint and the behavioural and technical constraints of the economy. Equivalently we could require our government to expand (contract) each type of education until the rate of return from additional expenditure fell (rose) to the rate obtainable on the next best alternative investment. However I am sure that I do not need to convince practical educational administrators and planners of the difficulties of applying such criteria, even if one believes (as I do) that their eventual implementation would be desirable. As we all know, educational planners currently interpret their brief as the setting and achievement of certain quantifiable targets, most often expressed in terms of student numbers or places, with little knowledge of, or concern for, except in a very broad and impressionistic sense, the implied rates of return or contributions to social welfare. Let us therefore accept this reality and consider the planner's problems in a more concrete form. The following seems a reasonably comprehensive and realistic list of the questions and decisions he will have to contend with:

1. what should be the total increase over the planning period in the number of full-time equivalent students?

2. how should this total be distributed between subjects?

3. how should the total be distributed by level? i. e. between undergraduates and postgraduates?

4. how should the total be distributed between full and part-time students?

5. how should the total be distributed between the different subsectors of the higher education system? For example, between the universities, polytechnics, colleges of education etc.?

6. what should be the change, if any, in the level, and distribution by subject, of research in the higher education sector?

7. are any new institutions needed?

8. are any new departments needed within existing institutions? New courses within existing departments?

9. should the production of undergraduate teaching, postgraduate teaching, and research continue to be diversified or could cost savings and/or quality improvements be achieved by allowing (or requiring) some institutions or departments to specialise in undergraduate teaching and others in postgraduate teaching and/or research?

10. are current teaching methods the most appropriate for coping with the proposed expansion?

Clearly questions 1—6 concern the "what to produce" problem and questions 7—10 are concerned with the "how to produce" problem i.e. how can a given set of outputs be produced at minimum cost? Question 10 is rather different from the other questions in the second group because although still concerned with the minimum cost method of producing a given set of outputs it introduces the possibility of cost savings through technical change, for example, through the large scale adoption of some combination of the new teaching media, and therefore raises the much broader problems of incentives for innovation, which on the whole are sadly lacking under the current system.

Although some questions on this list (5, 7) are obviously inapplicable at the institutional level and in other cases (the overall growth rate, the distribution between subjects and levels) the choice of the institution is constrained by the requirement that the plans of individual institutions must in aggregate be consistent with sectoral targets, institutional managers will be concerned, although at a lower level of aggregation, with some of the same general types of problem, notably the production of given outputs at minimum costs as planners at the sectoral level. But we should not be misled by this formal similarity into believing that results from the two types of planning exercise are interchangeable.

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Cost analysis

We shall for the remainder of the paper concentrate on the cost aspects of these planning questions. It is clear that to answer our questions fully it would be necessary to compare the benefits as well as the costs of alternative courses of action. However this is not to say that cost analysis on its own cannot be extremely useful to the planner. Cost studies can indicate the feasible range of options that can be considered with a given budget constraint. They can indicate how great the benefits of one option would have to be to make it preferable to its next best alternative. And, if outputs are specified exogenously, which is often the case, cost minimisation becomes an objective in its own right.

Let us now try to be a bit more specific about the type of information that the planner requires from cost studies in order to allocate resources more efficiently. In essence such studies attempt to provide information about the cost implications of the technical relations of production in higher education — the relations between inputs and outputs. Knowledge of these technical relationships is of crucial importance. Policy-makers have objectives, which are related to educational outputs. However they cannot simply wish the outputs into existence but must attempt to ensure their production by the correct use of the policy instruments at their disposal; namely the control (or some measure of control) that they have over the inputs structure. It follows that if they do not understand the process by which inputs are transformed into outputs they will not, except by chance, be able to produce the desired outcomes. In some cases it may be necessary to have direct knowledge of the production relations (to know the degree of substitutability between inputs for example) but for some questions it may be sufficient, or even more useful, to have this information expressed in cost terms. In case it is thought that undue emphasis is being placed on the technical aspects of the higher education system we give some examples of questions about the technology of educational production, expressed in cost terms, which the educational planner must be able to answer if he is to achieve his objectives at least cost:

— how much, on average, does it cost to educate an undergraduate or postgraduate in a given subject?

— is there an optimum size of department at which average costs are minimised?

— is it cheaper to educate *extra* undergraduates or postgraduates in large, small or medium departments (institutions)?

— is it cheaper to provide extra postgraduate or undergraduate teaching of a given quality in departments with a strong research orientation or in departments which do little research?

— what is the effect on the quality of education received by students when cost savings are effected by reducing the staff-student ratio?

— does the expansion of institutions or departments lead to changes in the shares of different inputs (academic staff, technical staff, secretarial and administrative staff, apparatus, equipment, libraries, etc.) in total costs?

More generally we can say that educational planners need three crucial types of information:

— they need to know the level, and its variation with scale, of *average costs;*

— they need to know the level, and its variation with scale, of *marginal costs* (the costs of additional teaching or research outputs);

— they need to know whether there exist *interdependencies in production* between different outputs (sometimes called joint supply effects).

Broadly speaking there are two methods of trying to answer such questions about the production relations:

— we can try to *construct* models of the relations between inputs and outputs on the basis of assumptions, knowledge of salary scales and other factor prices, intuition, the opinions expressed by teachers and students, etc.;

— one can try to *estimate* the production relations using statistical (and econometric) techniques.

Generally institutional studies follow the first approach while sectoral studies are more likely to adopt the second. Let us consider the implications of adopting the different approaches and try to decide which provides the appropriate cost information for planning at the sectoral level.

The institutional v. the sectoral approach

The first consequence of following the institutional approach of constructing cost models for particular institutions is, naturally enough, that if the

model is a good one it will necessarily have to provide a descriptively accurate picture of the institution to which it pertains; the capacity of the institution or department under scrutiny, the degree of capacity utilisation, sizes of lecture halls, numbers of places in the library, the tastes and behaviour of its academic staff and many other relevant constraints. Let us now suppose that we are examining the relationship between teaching costs and student numbers (assuming for the moment that we have managed to separate out research costs). The detailed descriptive accuracy of the institutional approach will lead, for a given subject, to a relationship something like a "stepped" cost function with "steps" or "jumps" occurring when lectures or classes have to be duplicated, either because this is deemed necessary on educational grounds by the teacher or because some physical capacity limit has been reached. In between these points the marginal cost of additional students is zero as they simply fill up spare places in already existing classes. Thus, for the subject to which our hypothetical cost functions refer, as student numbers in university X are expanded between points *a* and *b* no extra costs are incurred but at point *b* the addition of a single student will cause an increase in total costs. In terms of average costs this implies a pattern of steadily falling average costs punctuated by sudden increases.

If we follow the sectoral approach we take paired observations of cost and student numbers from departments in a cross-section of many institutions and use statistical techniques to find the line or curve that best fits these observations. Some institutions (universities) will have higher actual costs and some lower, than indicated by this fitted function. By constrast with the cost function for institution X, additional students between points *a* and *b* do cause additions to total cost i.e. marginal cost is not zero. Similarly average costs vary smoothly over the range of observations including points such as, a, b, d, etc. which corresponded to discontinuities in the average cost pattern of university X.

Now we must ask ourselves which is the relevant type of information for the planner of higher education at the sectoral level. The answer depends on the degree of control exercised by the centre (the planning agency) over individual institutions. If the centre is to dictate to each departement in each university how many extra students at each level it is to take then possibly it would require the type of detailed information that institution-based studies provide.

But in the UK, the UGC does not exercise this degree of control over individual departments. Therefore when costing alternative educational strategies the planning agency must ask itself how it can produce a proposed expansion of national student numbers at minimum cost. To answer this it needs to know how, if at all, marginal cost varies with scale. If, for example, the proposed expansion were spread evenly between all departments raising the average departmental size from $a + l$ to b then it cannot assume that this will cost nothing simply because in university X the expansion can take up spare capacity. Departments in different universities will have different constraints, and hence "jump points" or steps in their cost functions will not occur at the same departmental sizes as in university X. What is needed is a marginal cost figure that reflects the fact that in some departments, such as in university X, the expansion can be met in a costless or near-costless manner while in departments in other universities classes may have to be duplicated, new staff hired etc., thereby increasing the total cost of that department. This "average" level of marginal cost for any given scale is what we measure with our estimated cost function (more specifically with the first derivative of the estimated function) i.e. the estimated function provides information about the costs of an "average" or "typical" department and it is this type of information that must be used for national planning, not information about a particular and possibly unrepresentative department.

Thus we would conclude that unless the planning agency is going to exercise detailed control at the departmental (or course) level the cost information it requires for planning educational expansion can only be obtained by applying statistical techniques to data coming from a cross-section of institutions.

ESTIMATED CROSS-SECTION COST FUNCTIONS: A CASE STUDY

The actual estimation of cross-section cost functions poses a host of conceptual, measurement and statistical problems. Of these the most fundamental and difficult is the problem of measuring and defining output.

The question of what it is that a university produces poses quite basic questions about the objective function of the university, about the university's role in society, and about the relative weight that should be attached to the tastes and requirements of the different participants, consumers,

and financers of higher education. However until output is measured somehow it is impossible to talk sensibly about costs (the costs of *what?*). It should be noted in passing that higher education is not unique in posing awkward problems of output measurement; how does one measure the output of the civil service, the health service, and banks? In our study we concentrate on the teaching and research outputs of the university because some type of measurement is possible. This ignores the general social services dimension of university output, which include the socialisation, screening and sorting of students, the activities of university staff as consultants to governments, and as commentators on issues of social importance etc. There is no implication intended that these services are unimportant.

Measuring teaching output

As regards teaching outputs we follow tradition and measure the annual output of a university department by the number of undergraduate and postgraduate students enrolled. (Our measure is actually slightly better than this, being based on student load rather than a simple head count, thus allowing for cross-department teaching). It is of course clear that student numbers cannot be regarded in any fundamental sense as the "true" teaching output of the university. All one can do is hope that they are a good proxy measure. In general student numbers are probably a reasonable proxy although three basic shortcomings should be noted:

— a student year measure takes no account of interdepartmental variations in the *quality* of teaching output;

— a student year measure assumes that a year spent by a student who subsequently drops out it equivalent to a year spent by an ultimately successful student;

— a student year measure of a department's output implies that, other things being equal, longer degree courses are worth more than shorter courses.

Measuring research output

Research output we measured in two alternative ways. The first method used was to make a count of the books and articles published by the department's staff over a 2-year period which were then averaged to provide an annual publications measure of the department's research output. The second method used was to take as an index of the research output of a department the annual hours spent on personal research by its academic staff (taken from a survey of the use of academic staff time). Of course research hours are strictly speaking an input rather than an output. This would make the measure inappropriate for doing cost-benefit studies of research output, but if we are just interested in making due allowance for research activity in order to measure more accurately teaching costs, then using the hours spent on personal research may be a good way of doing so.

Although the designation by academic staff of a proportion of their time as being primarly devoted to personal research may itself be rather arbitrary, our method of taking these figures at face value and then using regression analysis to allow covariation of undergraduate numbers and postgraduate numbers and research hours to allocate *marginal* costs between the three types of output is less arbitrary than simply deducting some proportion of overall costs (say, 30 %) which are thought to be attributable to research and treating the remaining costs as if they were entirely attributable to teaching. This latter method is usually used in institutional studies and perhaps it does no great harm as long as it is realised that if teaching and research are joint products then no unique allocation of total or average costs to the separate outputs is possible and that any such allocation which is adopted must be arbitrary.

It is clear that these measures of teaching and research output are by no means ideal but this is not really a field where one can afford to wait until ideal measures are developed — the problems are so complex that the ideal may not be attainable even in principle. What is called for, if research on costs and efficiency is to make any real progress, is a pragmatic approach which over time attempts to refine and improve approximate measures of output. Hopefully our measures of research output (publications, hours spent on personal research) are a move in this direction.

Estimated cost functions

Using these output measures we have estimated cost functions at both the departmental level and the central university level. The costs we are talking about are the recurrent institutional costs incurred in teaching and research. These fall short of the full social costs by the foregone earnings

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costs of students (in the case of teaching) and the capital costs of both teaching and research, which were omitted for lack of data.

Table 1 shows the fixed set-up costs and the marginal costs of undergraduates and postgraduates (i.e. the cost of additional undergraduates or postgraduates) for departments in six major subject groups. Table 2 shows fixed and marginal central costs and Table 3 adds together marginal costs at the departmental and central levels to give the overall marginal costs of undergraduates and postgraduates in the six subject groups. Corresponding average costs of undergraduates and postgraduates cannot be derived because there is no unambiguous way of allocating fixed costs between undergraduate teaching, postgraduate teaching and research.

TABLE I

Fixed and marginal recurrent departmental costs (£)

	Arts	Social sciences	Maths	Physical sciences	Biological sciences	Engineering
Fixed (set-up) cost	2,391 (1,692)	9,309 (2,591)	826 (3,212)	1,995 (5,165)	3,103 (2,550)	6,203 (6,562)
Marginal cost of undergraduates	134 (24)	133 (22)	118 (32)	243 (74)	310 (69)	441 (68)
Marginal cost of postgraduates	468 (114)	620 (110)	902 (230)	1,533 (288)	1,012 (286)	1,049 (161)

TABLE 2

Fixed and marginal recurrent central costs (£)

Fixed (set-up) cost	MC arts-based undergraduates	MC science-based undergraduates	MC arts-based postgraduates	MC science-based postgraduates
113,694 (16,674)	171 (64)	235 (40)	242 (124)	564 (141)

TABLE 3

Marginal total (departmental plus central recurrent costs (£)

	Arts	Social sciences	Maths	Physical sciences	Biological sciences	Engineering
Total undergraduate MC	305	304	353	478	545	676
Total postgraduate MC	710	862	1,466	2,097	1,576	1,613
Ratio (postgraduate MC/ undergraduate MC)	2.33	2.84	4.15	4.39	2.89	2.39

Notes to tables:

(1) Standard errors of estimated co-efficients are shown in brackets.

(2) All figures refer to the academic year 1968-69. They should be increased by about 47% to be expressed in prices ruling at July 1973.

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The figures in the tables are estimated in linear cost functions of the form:

$$C = a_0 + a_1U + a_2P + a_3R$$

where C = total recurrent departmental costs
U = undergraduates (per department)
P = postgraduates
R = annual hours spent on personal research

Implications

This particular form of cost function has three important implications:

— economies of scale (falling average costs) arise solely from the constant term a_0 i.e. average costs fall with increases in departmental size because the fixed cost is spread over progressively more and more units of output.

— there is no optimum size of department (or university). Average costs fall indefinitely (approaching marginal costs in the limit) and there is thus no reason for ever founding new departments.

— because marginal costs are constant (a_1 = MCU, a_2 = MCP) it makes no difference (in cost terms) whether expanded student numbers are concentrated in small, medium or large departments. (If marginal costs fall with scale then expansion should be located in larger departments.)

These implications are restrictive but we have been unable to find conclusive evidence that more complex forms, allowing for eventually rising average costs and non-constant marginal costs, fit the data better than the simple linear form. Nor did we find evidence that the marginal costs of one output were affected by the amounts of the other outputs being simultaneously produced (i.e. in terms of the question we asked in part I we have been unable to show that extra postgraduate teaching is cheaper in departments where a lot of research is being done than in departments placing less emphasis on research or vice versa) (1).

The main features that emerge from the tables are the relatively low fixed, or set-up, costs of departments (and hence small economies of scale effects) and the high postgraduate marginal costs, both in absolute terms, and relative to undergraduate marginal costs (the ratios in Table 3 should be compared with the ratios used by the UGC for planning purposes, which vary between 1 and 2, with arts-based subjects at the lower end of the range and science-based subjects at the upper end). An interesting feature of the findings was that when the research hours variable was omitted set-up costs (economies of scale) at both the departmental and central levels were greater than when the research variable is included, contrary to what one might expect (i. e. one might think that the omission of research would lead to underestimates of economies of scale if larger departments do more research relative to teaching than smaller departments — they do not).

SOME CONCLUSIONS

The general conclusion is that cross-section estimation is the most useful and appropriate technique for providing the information needed for improved educational planning at the sectoral level. This is not to say that institutional studies are without value. They can help to improve internal efficiency by providing administrators and departmental managers with greater knowledge of the workings of their own institution.

Here we might digress briefly and ask whether there is any *incentive* for efficiency improvements at the institutional level. If a given institution proves itself to be more efficient than the average in the sense of producing its given output more cheaply than the average institution, then it will want to know how it is going to be treated the next time funds are distributed. If it believes that any cost saving will simply lead to a reduction in the money it receives at the next grant allocation, it may "consume" its improved efficiency in non-essential expenditure such as more expensive furniture, good football teams etc. Similarly we should ask, as a matter of urgency, whether there is any incentive for individual teachers in our institutions of higher learning to become more efficient, in particular to be innovative in their choice of teaching methods.

But however useful or therapeutic such institutional studies may be, it should be recognised that there are some questions that they cannot answer simply because they provide information about the behaviour and characteristics of a particular institution whereas we have argued that a planner

(1) Although this finding was contradicted by a separate analysis that showed hours spent on postgraduate teaching significantly affect the amount of research output produced by a department.

needs to know the cost behaviour of the average institution. To get this he requires not a single observation of a university with departments of a given size and given teaching and research mix, but a range of observations of departments (teaching a given subject) of varying size and output mix. Thus the cross-section estimation of cost and production relations really is indispensable for the rational planning of higher education.

To finish may I suggest that a fruitful topic for discussion may be not whether such studies are worthwhile (unless anyone disagrees violently with my case) but how they might be improved, and in particular what types of data are needed to improve the reliability of the findings. I make some suggestions to begin the discussion:

First, it seems to me that the most urgent requirement is for improved data on the *quality of teaching outputs*, i. e. to get away from simply using student numbers as a proxy for teaching outputs. If we had had adequate teaching quality measures some of the findings of the study reported in the previous section may have been modified. For example, economies of scale and joint supply effects may both relate partly or primarily to the qualitative dimension of output. Two approaches to the quality problem suggest themselves. Firstly one could attempt to ensure that class of degree results were more comparable between institutions. At present the enormous variation in class of degree awarded cannot possibly reflect pure quality differences in the "finished product". The other approach would be to seek standardised "before and after" tests which attempt to measure directly the cognitive gain of the student. Clearly this approach is more suited to some subjects and levels than others. A third approach, more acceptable to economists than educators no doubt, would be to collect data on students' lifetime earnings differentials by subject, class of degree, and institution, and use these either to calculate rates of return or to weigh up student number data.

Second, on the research side it seems worthwhile to extend the work on *publications-based measures of output*.

Third, combined with improved measures on teaching output it would be highly desirable to have information on *the use of student time*. Combined with information on the use of staff time, class size, etc., such data would enable us to estimate directly the production relations between educational value-added and student and institutional inputs. Student time is a valuable resource that is too often overlooked by teachers and administrators although it is now widely recognised, by economists at least, that the cost of student time is one of the major real costs of higher education. Could this resource be used more efficiently? For example, the use of student time and staff time are to some extent substitutable, as are different teaching arrangements which use student time more or less intensively. Studies are required to see whether such substitution could reduce costs and/or improve the quality of teaching outputs.

Fourth, the type of analysis we have been talking about in this paper requires *the standardisation of data*, especially cost and student number data in the first instance, within and between the different branches of higher education. In the UK the university cost data is well standardised (much better than in the US for example) but as between, say, the universities and the polytechnics there is little standardised data with which to effect useful cost comparisons, although comparisons are frequently made on an impressionistic basis.

Reforming the finance of higher education – student loans

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Our paper will consider the idea of loans for university students and the relative merits of alternative types of loan schemes, from the point of view of the United Kingdom, where at present no such schemes exist on a widespread basis. Apart from limited independent loan arrangements for

postgraduate students (1), the system in general is for tuition costs and support for living expenses to be met by grants from public funds.

Several of the countries represented at the conference have student loan schemes in operation and for them the idea is not in itself a "reform". Nevertheless we feel that a discussion of general principles based on research which was aimed at trying to devise an "ideal" loan scheme for the UK, may be helpful as a starting point for discussion of possible reforms that could also have relevance for countries which already have loan schemes. Our paper deals with student loans in universities, but the issues are similar in other higher education institutions. The research on which the paper is based was carried out for the Institute of Economic Affairs, and we are grateful to them for permission to use the material for this paper.

Background: university finance in the United Kingdom

The universities in the United Kingdom are private autonomous institutions. The members of staff are appointed by the university and not by the state, and other aspects of academic policy such as the content of teaching and research, standards of admission and numbers of students are decided by their own governing bodies.

However, what has been called "the Achilles' heel of academic freedom in universities" (2), is the question of finance. Although when Sir Eric Ashby applied this term, some twenty years ago, it referred to the influence of non-academic parts of the self-governing system (e. g. university councils) through their financial control, it has since become applicable also to the issue of possible pressures by the state exerted through its predominant role in financing the universities. On matters such as the priorities for developing one department or subject of study as against another, efficiency of teaching methods (as reflected in differing ratios of the number of students per member of staff), rate of expansion of student numbers and the balance between teaching and research, the University Grants Committee which is responsible for allocating public grants has been exerting pressures which are felt to restrict to some extent the autonomy of the universities.

This issue has become important as the dependence of the universities on public funds has increased substantially in the post-war years. In 1937 government (central and local) provided about half the funds of British universities; by 1954 the proportion had risen to 86 % and by 1967 almost all (94 %) of universities' income came from public funds.

Underlying this development was the major growth of student numbers from 50,000 in 1938 to 228,000 in 1970 and the accompanying growth of universities' expenditure from about £ 7 million in 1937 to about £ 382 million in 1970. The post-war expansion has been based on the principle that all students who meet the universities' academic requirements should be enabled by public finance to enter on a course. The fees charged by the universities are fixed at only a small proportion of the cost of tuition and a public grant towards living expenses is available (although with provision for a parental contribution, graded according to the parents' income) for almost all students. The proportion of universities' expenditure met from students' fees fell from nearly a third in 1937 to only 6 % in 1967; and almost all of these fees are now met from public grants paid to the university on behalf of the student. Among other sources of non-government income which were important in earlier decades it is significant that private endowments and donations which accounted for 14 % of universities' expenditure in 1937 have since become almost insignificant (1 % in 1967).

The idea of student loans

Against this background, one can see that one major element in the proposal that students should contribute to the cost of their university education and repay from future income, is *to reduce the universities' financial dependence on the state.*

An earlier form of this idea for an increased "customer contribution" from the students was the proposal by the Robbins Committee on Higher Education (3) that the proportion of universities' costs

(1) E.g. the scheme at Cranfield Institute of Technology where postgraduate students (mainly those who have had a period of employment since graduation) can arrange loans privately with a bank, and repayment is guaranteed by the Institute. *Third Report from the Expenditure Committee* (House of Commons) 1973-74. *Postgraduate Education* HC, 96 HMSO 1973, Vol 1, p. XXVIII and Vol 11, p. 394.

(2) Ashby, Sir Eric, "Self-Government in Modern British Universities", *Science and Freedom* No. 7, December 1956, p. 9.

(3) Cmnd 2154, HMSO 1963.

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met from students' fees should be raised nearer to its pre-war level. The committee suggested that at least 20 % of universities' current costs should be met from students' fees.

This contribution would not come from the students' own resources but from an increase in the fees paid on their behalf from local government funds. The effect would be to reduce the dependence of the universities on central government grants and make them rely to a greater extent on funds from a different (though still public) source. Since the local government grant to pay his fees is a personal award to the student, there would be an increase in autonomy, in the sense that university could add to its financial resources by attracting more students, and would, to this extent, be freed from dependence on decisions by the University Grants Committee on the allocation of public funds.

The Robbins Committee also considered the idea of student loans. They recognised that by means of loans the student could be enabled to make a contribution to the cost of his higher education from his own future income, instead of from public funds paid in fees on his behalf. The principle of reducing the universities' dependence on state finance could thereby be carried one step further.

Two main arguments were considered to be valid in favour of this proposal. First, that it would lead to *a fairer distribution of burdens between the taxpayer and the student.* An important part of the benefit of a university education goes to the student in the form of higher future income due to the education. Higher education can be seen as an investment, of which the return largely appears as private advantage in terms of increased income, and it seems right therefore that the student should meet at least part of the cost of this investment by repayments from his future income.

The second major argument in favour of loans was *"the advantage of increasing individual responsibility"* (4). If the student were required to make a financial contribution from his own resources (in addition to that which he now makes by loss of earnings during the period of study, which is only partly compensated by the public grant towards his living expenses), he would have a stronger incentive to make the best use of his time at the university.

On the other hand, the committee also recognised some major arguments against student loans. It seemed to them that the connection between higher education and future earning power might not be so clear as was sometimes suggested. Loan schemes might also present administrative difficulties. Most important in weighing against the idea was the apprehension that the prospect of having to face the burden of future loan repayments might discourage young people from entering on a university education.

The Robbins Committee considered that the opposing arguments were very evenly balanced and they were divided on their relative importance. In the end, they concluded that a student loan scheme was not desirable at that time (1963) but that there might be a case for it in future. Since the expansion of university education to include a much wider section of the community than in earlier decades was still relatively new, they thought that at this stage there might be a discouraging effect on university entry. Later, however, if the idea of attending university became more firmly established,

> "the arguments of justice in distribution [between the taxpayer and the student] and of the advantage of increasing individual responsibility may come to weigh more heavily and lead to some experiment in this direction" (5).

Since then there has been considerable discussion of student loan schemes and various possible forms of such schemes have been examined (6). Opinion remains divided, and since the students enjoy at present a system of state grants meeting both the cost of tuition and living expenses (though not necessarily at a standard they would regard as adequate) which is more comprehensive than in many other countries, the National Union of Students is opposed to loans. However, a number of academic writers have favoured the principle of loans (6). Perhaps most significant in indicating a movement of opinion in favour of loans is that Lord Robbins, the Chairman of the Committee on Higher Education which reported in 1963, has since declared his view that the time has come to implement the idea of students making some repayment

(4) Ibid, p. 212.

(5) Ibid.

(6) Prest, A. R.: *Financing university education,* Institute of Economic Affairs, 1966. Peacock, A. T. and Wiseman, J.: *Education for democrats,* Institute of Economic Affairs, 1964. Blaug, M.: "Selectivity in education" in *Social services for all?* Fabian Tract 383, Fabian Society, 1968. Merret, S.: "Student finance in higher education", *Economic Journal,* June 1967. Lynn, R.: "Loans for students" in *Down with the poor,* Churchill Press, 1971. Glennerster, H., Merrett, S. and Wilson, G.: "A graduate tax", *Higher education review,* Autumn 1968. Wookhall, M.: *Student loans,* Harrap, 1970.

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of the cost of their higher education from the resulting increased income. Since the habit of entering on higher education has been widely established in Britain at an earlier stage than he had anticipated he considers that,

> "the time has now come when those who receive support for higher education should be required to make some repayment thereof if it results in identifiable material advantage" (7).

Lord Robbins emphasised, however, that he was not in favour of a loan scheme imposing an obligation to repay a fixed amount. He considered that repayment should be related to income, on the grounds that this would (at least approximately) ensure that only those who benefited from higher education by an increase in their income would be required to meet part of the cost. He favoured a graduate tax instead of a straight-forward loan scheme.

More recently, in 1973, an official report on postgraduate education (8) recommended that loans should be introduced to meet part of the living expenses of postgraduate students. The report left open to question as to what type of loan scheme should be introduced and recommended that the government should set up a working party to examine proposals for a suitable loan scheme for postgraduate students in Britain.

Thus the discussion has now reached the point where Lord Robbins favours the principle of some form of repayment of part of the cost of their higher education by all university students, and a House of Commons Committee has recommended the same principle for postgraduate students. The question remains what kind of loan or tax scheme might be adopted. Some of the issues of principle affecting this choice are discussed in the remainder of our paper.

Types of loan scheme

Our research on existing loan schemes in other countries and on proposals for reform or development of entirely new schemes, shows four main categories: private or public; and fixed amount obligation, or repayment depending on the graduate's income.

In each of these categories there are varying types of schemes intermediate between the extremes represented by the alternatives. Thus a loan may be entirely private, representing a purely personal transaction between the student and a commercial lender. Or it may be partly private, but with either the university or some other corporate body or the state intervening to ease the terms on which the student can borrow (for example by guaranteeing repayment of the loan). As the degree of assistance in such a private loan transaction increases (e.g. by the state subsidising the rate of interest paid by the student to a level far below the commercial rate) the loan scheme approximates towards the other extreme of a wholly state financed transaction. In the purely public loan scheme (as in the US National Defence loans and in the Scandinavian countries) the state goes beyond acting as guarantor and replaces the commercial lender in advancing the money, as well as offering terms of repayment incorporating a substantial subsidy.

Again, as between the alternatives of either a fixed amount to be repaid (straightforward loan) or repayment depending on the graduate's income there are various intermediate possibilities. Almost all existing schemes are straightforward loans, with a fixed amount to be repaid. The idea of linking the amount repaid to the level of the graduate's income — both to ease the burden of repayment and on grounds of distributive justice because the repayment obligation would then be at least approximately linked to the private benefit obtained by the student from his higher education — is, as yet, mainly in the stage of a proposal. But there are in some existing schemes elements of varying repayments with income, representing various stages in the range of possible schemes between a strictly fixed obligation and one which is wholly "income contingent".

A partially income-related loan

The Scandinavian state loan schemes generally include a provision for excusing repayment when income falls below a specified level. This may be regarded as the first step in relating repayment to income, because at least it deals with the problem of the lower end of the income distribution of graduates (including married women who may have no independent income). If no such provision is

(7) "Fair selection for a degree", *Financial Times*, 21 August 1971.

(8) Third Report from the Expenditure Committee (House of Commons) 1973-74, *Postgraduate Education* HC 96, op. cit., Vol 1, pp. XXVIII-XXIX.

made then the graduate with low income is faced with the choice of either hardship or default; a burden which is unjustified because he has not obtained material benefit from his higher education, and of which the possible future prospect depresses the amount of debt that students are willing to incur.

Next in the range of possibilities is to retain the principle of a fixed total obligation but to vary the amount repaid each year (either as interest or repayment of principal) in a way that bears some relation to the expected income of the graduate. The Swedish system of not charging interest, and instead varying the amount of annual repayment according the prevailing rate of price inflation, is a step in this direction. If (as expected) prices rise during the period of repayment, then the effect will be to reduce the amounts repaid in the early years and increase it in later years, compared with the payments that would have been made if a fixed rate of interest had been charged. Since in this period the graduate's income will typically be rising with age, this pattern of payment is more nearly related to the graduate's ability to pay than a straightforward debt with interest.

A fully income-related loan

A further step in this direction is the Norwegian system which again retains the principle of a fixed amount to be repaid and also charges interest, but varies the annual repayments according to the graduate's expected future income. This is a more systematic attempt to relate repayments to ability to pay, but it falls short of a fully income-related plan because the total amount to be repaid is still fixed irrespective of income and the annual repayments will vary with expected, rather than actual income.

Next in the range of possibilities are fully income-related loan schemes. Here the principle is still repayment of a loan, but the obligation is not to repay a fixed amount each year, but a fixed proportion of the graduate's income. Examples are the proposed government-sponsored Educational Opportunity Bank plan in the US (9) and existing private schemes at Yale and Duke universities. In the Educational Opportunity Bank plan (1967) it was envisaged that for every $ 3,000 (£ 1,075) borrowed the bank would charge borrowers 1 % of gross income over an average period of 30 years. A maximum period of repayments was fixed at 40 years and graduates with low income would stop repaying their 1 % annual contribution for each $ 3,000 borrowed at the end of this period, even though they had not repaid their full debt plus interest. Those with higher incomes would stop repaying before the end of the 40 years maximum, when their repayments had discharged the debt plus interest. Since the better-off graduates completing their repayments earlier would pay a relatively high rate of interest (above the rate at which the bank borrowed) they would, in effect, pay a subsidy towards the shortfall of repayments by those with lower incomes. On this basis, the scheme as a whole was expected to be self-supporting, in the sense that each generation of graduates would collectively repay the amount they had borrowed, plus interest at the bank's borrowing rate.

This principle of the better-off graduates subsidising the remainder is also applied in the privately conducted income-related loan schemes at Yale and Duke universities. It is open to objections and we suggest an alternative method at the end of our paper. At this stage we may note that any loan scheme charging annual repayments as a given proportion of income instead of a fixed amount, runs up against the problem that if the amount borrowed is fixed by reference to what the average graduate can repay, those with lower incomes will never repay the full amount of their debt plus interest, even if repayments continue over the whole of their working life.

Because of this feature of income-related loan schemes (in the form usually proposed), they are not "pure" loan schemes in the strict sense. Although a generation of graduates as a whole repay their debts plus interest, the individual will not necessarily do so. According to the level of his income he will repay either more or less than his debt.

A graduate tax

Thus, as we move from an ordinary straightforward loan with fixed amount obligation, through modifications relating repayment to income, to a fully income-related plan, the scheme begins to resemble a tax. And at the end of this range of possibilities we come to the type of scheme which

(9) *Educational opportunity bank*, A Report of the Panel on Educational Innovation, President's Science Advisory Committee, US Government Printing Office, Washington D. C., 1967.

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abandons the form of a loan altogether, and levies a graduate tax ([10]). Here the idea of relating repayments to income is carried to the point where no specific individual debt is incurred by the student. Instead, there is a collective debt represented by the average cost of a university education and all graduates make a contribution to this, in the form of payment of a fixed proportion of their income. Unlike the income-related loan scheme of the Educational Opportunity Bank type there need not, in principle, be any provision for the better-off to cease repayment when they have discharged their debt (although this could be incorporated). In principle such a tax, like any other levied on the benefit principle (e. g. motor tax), reflects the idea that a group of people have benefited from public expenditure and should make some repayment — in this case according to their means. A graduate tax, therefore is

> "not a loan in the sense of a sum of money lent on condition that it is repaid" ([11]).

The advantage of such a scheme is that the administrative problems of relating repayments to an individual debt obligation, which are considerable in an income-related plan, are avoided. The disadvantage is that the obligation to pay the tax is no longer closely related to the debt incurred through the cost of one's own higher education. The objective of fostering a personal sense of responsibility among students for the cost of their own higher education is therefore less likely to be effectively achieved than in a scheme which retains the character of a loan.

The "ideal" plan

When we come to attempt a selection among this wide range of possible plans to decide which might be preferable for adoption in Britain, one point is immediately apparent. No scheme is ideal for all possible circumstances and all sections of the student community. European countries, which tend to favour state loan schemes, also have private arrangements alongside them. The United States has a wide variety of loan schemes ranging across the entire spectrum from purely private to wholly public, and from straightforward loan plans with fixed amount repayment to income-related schemes.

Since one of the main objectives of introducing student loans — at any rate in the British context — is to reduce the dependence of universities and students on public finance, there is a strong case for fostering a variety of private initiatives meeting the needs of particular universities and groups of students. A monolithic state-sponsored plan providing student loans for everyone might have disadvantages comparable to those of the present system of universal grants. Probably, therefore, Britain might prefer to follow the US model of a variety of forms of help from the state and other institutions to assist the development of loan schemes appropriate for particular higher education institutions and particular groups of students. Not least among the advantages of such a diverse system would be the encouragement it provides for innovation in methods of educational finance which has been considerable in the US and is unlikely to have reached its limit.

Nevertheless there are some basic principles, arising from consideration of different types of loan schemes, which can help to determine the choice of a scheme that might meet the needs of the majority of students.

Since the aim for reform is greater diversity in sources of university finance, there would seem to be two main criteria for the ideal loan scheme:

— First, that it should provide the best facilities for a tolerable burden of repayment and thereby encourage maximum participation by students — both in number of borrowers and amount borrowed — and least discouragement to attending a university course.

— Secondly, that so far as possible the source of the loans and the administration of lending should lie outside the sphere of government.

If both these requirements could be met, then we would have a purely non-government scheme providing ideal conditions of lending to students. Unfortunately, experience of loan schemes, particularly in the United States, suggests that these two requirements of entirely private finance and an ideal loan scheme are unlikely to be achieved together. If we choose private finance the borrowing conditions seem likely to fall short of the ideal; if we choose ideal borrowing conditions we are led into a scheme where the state plays a major part.

Ideal borrowing conditions

The main requirement for ideal borrowing conditions is a repayment scheme adapted to the student's capacity to repay from future income.

(10) Prest, A. R.: op. cit., Glennerster, H., et al.: op. cit.
(11) Ibid. p. 27.

This means, for the majority, a need for a long repayment period — ideally up to 40 years, so as to include the years of greatest income advantage over non-graduates (after age 45).

Secondly, the obligation should be income-related, requiring repayment of a specific proportion of future income and not a specific amount. Analysis of the US student loan experience has shown that a fixed amount obligation discourages borrowing because the student carries the risk of having to estimate his future income. Consequently he may either borrow too little in relation to what he will ultimately find he can repay, or else borrow too much and default.

If he is over cautious then the scheme fails in its aim of encouraging maximum tolerable contributions from future income. This seems to be the case among the majority of student borrowers in the United States. The system of fixed obligation loan schemes with repayment period limited to 10 years ([12]) is considered to have influenced borrowers in restricting their loans to only small amounts requiring, on average, annual repayments of only about 1½ % to 2½ % of the median income of graduates during the repayment period ([13]).

While the majority seem to have erred in this direction a considerable minority made the opposite mistake. They over-estimated their income prospects and borrowed more than they could afford to repay. Information for the late 1960s showed about 13 % of US National Defence Loan borrowers in arrears with their repayments (1966-67), while in Sweden where loan repayment is also in principle a fixed amount obligation (though the amount varies with the level of prices) the proportion was 12 % (1969-70). It is thought that the fear of being unable to meet repayment obligations has been a factor in limiting the proportion of students taking advantage of loan schemes in the US to only about one-fifth (1967-68). Only about 6 % of students' expenditure on fees and maintenance in 1966-67 was estimated to have been met from loans.

Private or public

The deficiencies of US loan schemes in departing from optimum conditions for borrowers are not due to the defects of private compared with public loan schemes, since the principle of a fixed amount obligation and limitation to a 10 year repayment period are common both to government loans (National Defence Student Loans) and to loans from banks and other non-government sources guaranteed by the federal government (guaranteed loan scheme). But the discussion of possible reforms leading to more favourable lending terms reveals the limitations of any advance in this direction on the basis of private loans. It also helps to illuminate the reasons for the existence of schemes embodying various degrees of state intervention.

The issue of private versus public loans is very much alive in the US because there is a strong preference for schemes that could take loan finance entirely out of the public budget. If the initial advance as well as the ultimate repayment could come from private sources, then the relief to public funds would be immediate instead of being long postponed. For this reason there is a preference for the extension of federally guaranteed private loans instead of public advances under the National Defence Loan scheme. Similar considerations might well apply in the UK.

In principle, the major limitation of private lending for the cost of a university education is that the only security which the student can normally offer is the prospect of an ultimately higher income due to his education. In a free society, this is not a commercially disposable asset which can be offered as security. (There are limited exceptions, for example a contract binding the student to a fixed term of service with a prospective employer, of sufficient length for the employer to reap some of the benefit of his education; in that case the employer may lend the cost of his higher education by paying for it, and subsequently recovering it from reduced pay). In addition, the prospect of additional earnings, though probable for the average student, is uncertain in the individual case. Information on male graduates' earnings in England and Wales (1966-67) ([14]) showed that although their median earnings were 1 ½ times those of men with no qualification, about one-sixth (16 %) had earnings no higher or less than the median for men with no qualification. A further 10 % had only a

(12) Following a "grace" period of 9 months after graduation.

(13) Hartman, R. W., *Credit for college*, McGraw-Hill 1971, p. 23. Average debt incurred by National Defence Loan borrowers in 1967 was $ 1,247 (£ 450). For borrowers under the guaranteed loan programme (private loans guaranteed by the state) the average was $ 1,386 in 1968.

(14) *Survey of earnings of qualified manpower in England and Wales 1966-67*, Statistics of Education, Special Series No. 3, HMSO 1971.

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small earning advantage so that about a quarter probably obtained a nil or negligible return on the cost of their higher education when compared with income prospects of the median non-qualified earner.

The result is that a strictly private contract between a lender and a student, with no one else intervening to offer security or guarantee of repayment, is likely to entail onerous terms (if the loan is available at all). In the United States, before the advent of federal government loan schemes, commercial lenders were offering loans for very short terms and with high interest rates — usually repayment was required within six years from the beginning of the period of study and annual interest ranged up to 20 % or more. Universities had in some cases funds available from which they provided loans on more favourable terms, and a non-profit agency (United Student Aid Funds) backed by reserves contributed by private donors and universities, also offered better terms. But such schemes are no longer strictly commercial; and their limitation in practice was that the funds available on this basis were necessarily restricted.

The limited private schemes which exist for loans to postgraduate students in the UK (e.g. the schemes for business graduates and for postgraduates at the Cranfield Institute of Technology [15]) are applicable only for special conditions. In these cases the banks charge favourable interest rates, below the commercial level, probably because the students are in many cases people already established in their occupation (post-experience students) with good incomes and future prospects. At Cranfield an example was given of such students entering the institute at the age of 27 with an income of £ 3,000 and immediate prospects on obtaining their postgraduate qualification of £ 4,500 (1973) [16]. In such cases a bank will offer favourable terms in the hope of retaining the student as a customer. And even so, the repayment obligation (probably over a relatively short period) is such as to be acceptable only to students with these favourable income prospects. For them a short repayment period with high annual payments is not only tolerable, but may well be preferable to a long-term commitment. Schemes of this type clearly have a part to play, but they are not applicable for the majority of students.

In the United States, the major development of lending for up to 10 years after the end of the period of study and at much lower interest rates than under purely commercial schemes, has only been made possible by the introduction of loans provided or guaranteed by government and incorporating an interest subsidy. But even with a federal government guarantee, private lenders consider that a much longer repayment period — up to the ideal of 40 years — would entail a prohibitive rise in interest rates [17]. This would result either in serious discouragement of borrowing or a major increase in government subsidy. What the higher interest rate might be is not known, because long-term loans beyond the ten-year limit are not being offered to students by any of the US private lending agencies.

Since US commercial lenders are extremely reluctant to envisage very long-term loans, even with the protection they enjoy through the federal government guarantee, mainly because of the high collection charges and extra loss of liquidity that would be entailed, it follows that they are also unlikely to introduce the second part of the ideal borrowing requirement — loans with repayment based on a specified proportion of income instead of a fixed amount. For income-related loans would ideally entail not only a long repayment period — preferably 40 years — but also still further administrative costs; including not only the normal collection charges that in any case rise steeply with the period of repayment (because it becomes increasingly difficult to keep in touch with the graduates) but also the cost of procedures for assessing their incomes.

The only existing income-related loan schemes in the US are (so far as we know) the private plans operated by Yale and Duke universities. These of up to $ 800 for each year of tuition, or a total of commercial financing of such schemes are overcome by means of the substantial resources which the universities have available to subsidise the scheme. In addition, the amounts borrowed on the income-related bases are small in relation to the favourable income prospects of the students at these universities. The Yale plan (1971-72) provides for a loan of up to $ 800 for each year of tuition, or a total of $ 3,200 (about £ 1,200 for a 4-year course). Repayment is at the rate of 0.4 % of income for each $ 1,000 borrowed so that this maximum debt would entail an annual charge of just over 1¼ % of the

(15) *Third report from the expenditure committee* (House of Commons) 1973-74. op. cit. Vol 11, pp. 393-5.

(16) Ibid. p. 395.

(17) The existing rate in 1968-69 was 7 % under the guaranteed loan scheme (equal to the rate required by lenders). With remission during the period of study, the effective rate to the student was 4 ¼ %.

graduate's income for a period of up to 35 years. Where income is substantial (as in the case of graduates from these universities) such a small proportion will entail an insignificant burden.

The American proposal for income-related loans that would be appropriate for the majority of students, outside these special conditions, is for the establishment of a federal government agency (Educational Opportunity Bank). This agency — although not a government department and therefore preserving a degree of autonomy, would have power to borrow at government rates. The problem of high commercial interest rates over long periods would thus be avoided by making use of the government's standing as a borrower backed by tax revenues. In addition the agency would meet the problem of administrative costs by making use of existing income tax machinery, which not only automatically provides a continuing contact with graduates (otherwise a major problem) but also assesses their income without extra cost to the student loan scheme.

Conclusion: a public income-related scheme

US experience therefore indicates that government backing has been needed for the movement that has so far taken place towards the ideal of longer repayment periods (in contrast to those offered earlier under purely commercial conditions); and that private lenders are unlikely to go further along this road and most unlikely to reach the ideal of a 40-year income-related plan.

In Scandinavia (except Finland) where loans are wholly government provided, repayment periods are up to 20 years or double the US maximum. There are also (as we have noted) provisions for excusing repayment when income falls below a specified level; provisions for varying the annual repayments — though not the total amount to be repaid — with expected future income of the student (Norway); and variation of repayment with the rise in prices (Sweden) which gives some approximation to correspondence with the variation of the graduate's income with age.

Nevertheless, the Scandinavian state lending schemes, though offering terms nearer to those of optimum borrowing conditions, fall short of the ideal of a fully income-related plan extending over the entire earning life of the graduate. If the ideal is to be realised, then both Scandinavian and US experience suggests that it will have to be under a government sponsored agency. Such an agency would meet the two problems of high interest rates and administrative costs by borrowing at government rates and using the income tax machinery.

Some further points

Loans should relate to tuition rather than maintenance

It seems to us that although in the Scandinavian countries (though not in the US) loan schemes are concentrated on meeting students' maintenance costs (while tuition charges seem to be generally low or non-existent), the role of loans seems ideally most appropriate to meeting the cost of tuition rather than of maintenance. The principle that the cost of higher education is an investment, of which the benefit is partly future higher income of the graduate, seems to apply most directly to tuition cost. Living expenses during study are also part of the investment, but it is particularly difficult in this aspect of cost to disentangle how much is current benefit and how much is strictly necessary as an investment in the education. The logic of loan schemes, enabling the graduate to repay part of the cost of his education from the benefit he derives in higher income seems to be most applicable to tuition costs.

If this principle is accepted, it would enable universities to charge fees that fully reflect the cost of tuition. These could then be paid by the students partly from loans and partly from grants made available personally to them. Such a system would embody the principle recommended by the Robbins Committee that universities should increasingly rely on income from fees rather than grants paid directly to them by government. It would promote free choice of their place of study by the students and could help to stimulate efficiency in universities, through competition to attract students. Under an income-related loan plan a maximum debt might be fixed (perhaps 3% of income repaid over forty years) and within this limit a student could be free to choose how much he spends and at which university.

A government sponsored lending agency

We would propose that the income-related loan scheme should be of the type recommended in the US scheme for an Educational Opportunity Bank,

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rather than a graduate tax. Such a scheme retains the character of a loan, with a specific amount borrowed in return for a percentage of income to be repaid. It therefore maintains the connection between the cost of the student's own education and the obligation to repay, which tends to be lost in a graduate tax. The strengthening of a sense of personal responsibility, which is a major part of the objective of student loans, is thereby retained. A government sponsored lending agency will also maintain, more effectively than a government department, independence from official influences on academic decisions; particularly since the agency (unlike the University Grants Committee) will be concerned entirely with lending money to students and not with matters of educational policy.

A subsidy from general taxation

On the financial aspect of such a plan we would suggest that the principle of better-off students subsidising those with lower incomes which is incorporated in the US plan (and also in the proposal for a graduate tax) ([18]), should not be followed. This principle (incorporated in the US Educational Opportunity Bank plan by effectively charging a higher rate of interest for the better-off; the "opt out" rate at which they discharge their debt before the end of the maximum lending period) has the effect of discouraging students with reasonably certain prospects of a high income, from taking up loans. There is no reason in equity why they should be faced with this obligation to subsidise lower paid graduates.

The need for a subsidy arises because the amount of the loan to be repaid (or tax to be recovered under the graduate tax) is fixed on the basis of what the graduate with average income can repay, at the specified repayment rate in terms of proportion of his income. Instead, the loan scheme should be designed so that the amount borrowed is adjusted (at least approximately) to the graduate's own expected future income — with the maximum permitted loan being the amount he could repay at the specified repayment rate (for example 3 % of income over forty years). The deficiency between the amount which graduates with expected low incomes could borrow and the cost of their tuition, would then be met from general taxation (financing a personal student grant) which is more equitable than requiring better-off graduates to pay the subsidy.

Our proposal, therefore, is for the adoption of an income-related loan plan sponsored by the state, on the lines of the US Educational Opportunity Bank, but modified to eliminate the element of subsidy from better-off graduates to those with lower incomes.

(18) In its simplest form (as a straightforward tax with minimum administrative cost) the graduate tax has no provision for the better-off to opt out of their payments when they have met their debt. It therefore entails an open-ended subsidy to graduates with lower incomes.

The need for new approaches: the Carnegie reports and their relevance to higher education in Europe

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To do justice to the work of the Carnegie Commission on Higher Education within the limits of one paper is impossible. One cannot do more than select a relatively few topics which would appear deserving of more detailed examination from the European angle and leave the further scrutiny to others.

THE PURPOSES OF HIGHER EDUCATION

We put this first despite the fact that the Commission did not set out its views until a very late stage in the development of its work (1). To quote the Commission's own summary:

"The main purposes of higher education in the United States today, and for the prospective future, as we see them, are:

— the provision of opportunities for the intellectual, aesthetic, ethical, and skill development of individual students, and the provision of campus environments which can constructively assist students in their more general developmental growth;

— the advancement of human capability in society at large;

— the enlargement of educational justice for the post-secondary age group;

— the transmission and advancement of learning and wisdom;

— the critical evaluation of society — through individual thought and persuasion — for the sake of society's self-renewal."

With the second and fourth of these purposes there will be little disposition to differ. The pursuit of learning through research and teaching is accepted everywhere as a function of higher education, particularly of the university, while the preparation of students for careers, whether in medicine, law or the church on the one hand or as engineers, physicists, economists and a host of other occupations on the other, is more and more a function of all post-secondary institutions in varying degree. About the other purposes there are difficulties; the Commission itself felt considerable uncertainty as to the precise definition of these roles and certainly there is much questioning in Europe. What are the responsibilities of higher education institutions to the ethical and aesthetic development of students? Do they extend to emotional as well as intellectual needs? What should be the relations between the institutions and outside society? Much is written and indeed practised in relation to the "service" function of the American college towards the community but where is the line to be drawn? Should priority be given to "useful" research? Should the institution be actively engaged in assisting public health services, housing improvement, economic rehabilitation? (2) If the academic has the right or the responsibility to "evaluate" the social and political order, how far may or should he go with his criticism?

These are valid questions everywhere. The Carnegie Commission gives its own views which are conservative rather than radical. It accepts the obligation of the university or college to serve society — but only in so far as is compatible with the academic nature of the institution; it accepts that university staff have the skills, the time, the facilities, the freedom to evaluate the problems of society, and suggest remedies, but is apprehensive lest radical teachers go too far; it insists that academics should limit themselves to persuasion and should not involve the institution as such; it accepts that the university has the responsibility to provide "a constructive environment", but rejects the statement in the UNESCO report, *Learning to Be*, that the fundamental aim of education is "the physical, intellectual, emotional and ethical integration of the individual into a complete man".

Whether the Commission's views are sound or not, either in the American or the European context, is not the important point. What is important is that it has examined the issues openly and thereby contributed to the final assessment about the purposes of higher education which every country must make for itself. No such detailed examination is available anywhere else, unless it be in the U.68 report.

EQUALITY OF OPPORTUNITY

Of particular importance to the Commission is the objective of enlarging "social justice" for the post-secondary age group, the realisation of the "American dream" of equality which in these days has come to include at least some experience of "college". Already some 40 per cent of the age group and a higher percentage than in any other country, go to college or university but this is not the "universal access" which is the objective. The Commission emphatically does not believe that everyone should in fact go into "higher education" but everyone should at least have an equal opportunity to do so. This is far from being the case at

(1) *The purpose and performance of higher education in the United States*, June 1973.

(2) Some interesting examples of how far some American universities become involved are described in one of the Commission's published research studies — Nash, G.: *The University and the City*, McGraw Hill, 1973.

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the moment for there are gross inequalities related to race, to socio-economic status, to sex and to region. The Commission examines these handicaps to college attendance, particularly in its report *New students and new places* (October 1971), and the steps which should be taken to remedy them — the economic (particularly in *Quality and Equality* (October 1968, revised in June 1970), and the non-economic (in *A chance to learn* March 1970). It devotes a whole report to the removal of sex discrimination (*Opportunities for women*, September 1973) and is concerned increasingly, too, about inter-generational inequalities (*Towards a learning society*, October 1973).

Though generally speaking the serious racial discrimination which still exists in American higher education is not found in Europe, the other inequalities persist in our countries. They have been sufficiently documented, particularly by OECD and need not be spelled out here. Though the objective of "universal" higher education or even the "mass" higher education which the United States is often described as having already achieved, is not necessarily accepted in Europe, we all subscribe to a much greater degree of equality of opportunity than exists at present; the remedies proposed by the Commission are therefore of interest.

There is no space to analyse them in detail but they are conveniently summarised in the Commission's final report, *Priorities for Action* (October 1973):

— The creation of sufficient "open access places", i.e. with low or no tuition fees, within daily travelling distance of all who want to attend. This is the function of the two-year "community colleges", many more of which should be established. (It should be noted that the Commission does not suggest a right to enter any higher education institution, many of which will still be highly selective.)

— The improvement of present and creation of new alternative educational opportunities to attendance at college, so enlarging the student's area of choice.

— Financial assistance to students through grants, loans and "work-study" arrangements inside or outside the college.

— Adjustment of study arrangements to suit students from different backgrounds, including the provision of remedial courses to enable backward students to catch up.

This brief summary does scant justice to the care and thought which have gone into the Commission's concern for the increase of equality without loss of quality which underlay all its work, from the first report to the last. No country, not the US nor any in Western Europe, comes in practice anywhere near the Commission's ideal. In Europe there is no open access to higher education except to the select few who reach the required academic standard; even that is not secured in the UK and is increasingly restricted in other countries as demand for places outstrips supply. A relatively generous system of grants (but not loans) is provided in the UK when, but only when, the students have secured entry to higher education. In other countries there are sometimes grants, sometimes loans but not on the scale which the Carnegie Commission or many others would consider adequate. Organised "work study" does not exist. The provision of alternatives is in its infancy and as for the remedial function to which the Commission attaches importance, it is not accepted as a function for higher education institutions.

Despite the differences, the objective of a greater measure of equality of opportunity is accepted and the means of achieving it are everywhere a matter for concern.

STRUCTURES AND GOVERNANCE

Higher education in the United States has 8.5 million students (1970) in over 2,800 recognised institutions varying in status from research-orientated prestigious universities through other (mainly non-doctoral) universities and "liberal arts" (mainly undergraduate) colleges to local two-year "community colleges" and in size from over 50,000 students to less than 200. This is so different from the pattern in Europe that there is little point in considering here what the Commission has to say about university and college structure. There are however a few points worth noting [3];

— the attention paid to economies of scale (which seems to have played little part in European decisions about size of institution, e.g. in the French 1968 preference for 10,000—12,000 students or the Wissenschaftsrat's 1970 recommendation for 8,000—15,000 students except in the larger cities);

— the dangers of "gigantism" which indicated a maximum of 20,000 even for the research uni-

(3) *New students and new places*, Chapter 6.

versities (a lower figure than is envisaged for some German universities — quite apart from the 100,000 of still unreformed Rome).

— the strong advocacy of inter-university co-operation (which Europe could certainly heed in the interests of optimum use of scarce resources).

More directly interesting is the Commission's examination of the government of universities and colleges, particularly in its report *Governance of higher education* (April 1973). It feels that the new pressures arising from, among other factors, the larger and more diverse student body, a divided academic staff, more aggressive public control and financial stringency make it essential to decide on the most appropriate form of institutional government. There is unfortunately no clear theory which can be used as a basis; the educational institution is not a democracy, nor a corporation, nor a consumer society nor a professional guild though it has some of the attributes of each. It is necessary to be pragmatic and consider what will work in practice. The Commission concentrates on six major issues and we can look briefly at each. They are: institutional independence, the governing board and the president, collective bargaining, academic tenure, the role of students, meeting emergencies.

Institutional independence

In the US as in the Federal Republic of Germany and in the Swiss Confederation, responsibility for higher education rests in general not with the central government but with the individual states. There are no federal colleges (outside the Armed Forces); all universities and colleges are either private foundations (Harvard, Yale, Stanford, etc. most of the liberal arts colleges and some two-year colleges) or are dependent on the state, which created and maintains them. One of the Commission's reports, *The Capitol and the campus* (April 1971) deals with the relationship between the state and the institution, including the difficult and delicate question of autonomy. The Commission recognises that under no circumstances can institutional independence be absolute; the legitimacy of requiring some degree of public accountability from educational institutions in receipt of public funds cannot be questioned. But there is a minimum degree of independence which academic institutions must have — in research, in the conduct of courses, in detailed financial and personnel matters. It is not sound to argue that such independence is essential to diversity, to innovation or even to academic freedom; the justifiable arguments are that professional matters are best left to professionals, that insulation from changing party politics is needed for effective operation, that only by autonomy can the critical and evaluative role of higher education be safeguarded. The Commission accepts that autonomy must be earned — by high quality performance, by effective self-government, by the economic use of resources and by law-abiding behaviour within the institution. It attempts to spell out in some detail the respective rights and duties of the state and of the institution and hopes that some kind of concordat along these lines will be accepted by both sides.

This is a highly controversial matter and not everybody even in the US, will accept the Commission's formulation. Nonetheless some serious efforts should be made to evolve a balance between the legitimate requirements of the state and a reasonable degree of operational freedom for the institution. It may be that a new consensus will emerge in Europe: in the United Kingdom the highly privileged universities have suffered increasing encroachment on their treasured autonomy while in France under the "loi d'orientation", there was an attempt to give to the universities a degree of discretion not enjoyed before; in Germany there have been violent oscillations of policy in some of the Länder, in Austria an attempt at a new definition is under way. The reflections and recommendations of the Carnegie Commission are therefore deserving of serious study.

The governing board

All the American colleges until the middle of the 19th century were private institutions and were vested in a board of trustees. Contrary to the practice in Western Europe, other than the UK, this pattern was followed when after 1862 new colleges were established by the state. At first the trustees were all-powerful but increasingly they have shared their power, first with the president who took over executive responsibility and then with the academic staff who have successfully asserted the right to control all matters of content (curriculum, courses, etc). Now yet a further threat has arisen through the demands of the students and this coupled with strong clashes of opinion among the teaching staff has jeopardised the stability of the institution and left it open to attacks

and encroachments from outside. The Commission's view on this is clear. It sees a vital role for the governing board as a buffer against the outside encroachments and as an arbiter in internal disputes. It is important however that day-to-day responsibility be vested in a president with a dynamic personality and supported by a strong administrative machine. To meet present day needs the institution itself should be diverse but this makes it all the more important to have firm central direction and a determined protector against the outside world.

This concept is of course the antithesis of the traditional system in continental Europe, where the universities are not only state owned and financed but state governed, where there is no central director but only an annually rotating rector and where the administrative staff owe allegiance to the state ministry more than to the institution. True, this system is changing. Direct state control is being modified somewhat, if only as yet through external advisory groups, though in France under the "loi d'orientation", institute and university councils were established. It is now generally accepted that the one-year rector makes little sense and longer terms of office are gradually being introduced. But change comes slowly. It is still not clear in Europe — and here we include the UK — what should be the role if any of non-academic people in university government or what are the optimum conditions for an administrative head.

Collective bargaining

Because the academic staff in American colleges feel their traditional rights are being threatened from many sides — from legislative encroachment, student power, the minorities and women, financial stringency — they are tending more and more to favour unionisation. Though this has as yet made little headway — in January 1973 only about 15 per cent of full-time equivalent posts were covered and this mainly in the two-year colleges — the Commission is very apprehensive. It sees a serious dilemma arising in that the academic staff cannot at one and the same time be a part of the decision-making process and adopt the "adversary" role implicit in collective bargaining. It accepts that in theory one role might apply to academic matters and the other to salaries and conditions of service but does not believe that this dichotomy is tenable in the long term. It feels that the right to unionise cannot be refused but strongly advises the academics in their own interest to think carefully before they embark on this course.

Though the universities in the UK with their greater autonomy (but not other UK institutions) occupy a middle position, the situation in continental Europe is quite different from the American. The academic staff are public servants with the same rights and practice of unionisation as other state officials; on the other hand, they do not have the same degree of autonomy even though within the general framework of the law governing the universities, they have in practice substantial control over academic matters and are being given an increasing voice in general decision-making within the institution. There are inevitably some potential difficulties in this situation and the Commission has done a service in pointing it out. But one wonder whether it is not being over-anxious; in any case it is unrealistic to think that there can be a clear choice between the two roles; a new working relationship has to be evolved and there is no reason to believe that this will prove impossible.

Permanent tenure

The practice of granting "tenure" after seven years' probation has been growing in the US so that now nearly half of all academic staff have permanent positions. But the practice is under considerable attack — from radical students against conservative professors, from conservative politicians against radical professors, from the public against pampered academics and more reasonably, perhaps, from administrators concerned to preserve flexibility. The Commission sees the advantages of permanent tenure, particularly as assuring academic freedom and the critical role of the scientist but thinks that it is a privilege which should not be cheapened by wholesale granting and which should not be irrevocable, for instance, in the case of institutional reorganisation involving redundancy.

One must view this apparently very restrictive concern of the Commission in terms of the general mobility of American society which contrasts with the situation prevailing in Europe. In most of our countries, academic staff once accepted, have as civil servants normal conditions of service including permanent appointment (in the UK, though not state servants, they enjoy a similar security). True in many countries the apprenticeship for junior staff is long and uncertain but once achieved the status is secure. There are, as the Commission points out, some risks in this situation, particularly if, as in the US at this time, the outlook is one of contraction rather than expansion. But

Europe as a whole is not facing contraction in higher education and it is unlikely that much heed will be paid to the Commission's warning.

The role of students

It was clear from references in earlier reports that the Commission believed that students had a role to play in such matters as "educational policy and student affairs" (4), making budget economies (5), evaluation of teaching (6) and curriculum questions (6). Yet its considered views on the subject, set out in the Governance report, are somewhat surprising. It has rather a fatalistic attitude to the rise of student power, which has been growing steadily for the last 100 years and "while rising and falling in intensity of expression will continue into the indefinite future". The present is a particular moment in time which has to be handled in the light of students' wishes, and the guide to what these wishes are is the Commission's survey of academic opinion, admittedly now four years out of date. The survey indicated that the aspects of college life in which students were interested were (in descending order) discipline, courses, degree requirements, admission policies, staff appointments and promotions. Analysed from another angle and taking courses as an example, 80 per cent of the students wanted consultation, 40 per cent wanted voting rights and only about 4 per cent wanted control; it was a comfortable thought that the demands of most students were relatively modest.

The Commission's attitude is "sympathetic"; it believes that "in those areas of governance where they have a substantial interest and adequate competence", students "can inform the decision-making agencies about their experiences and desires, give good advice, exercise good judgement, and support innovation" (*Governance of higher education*, p. 68). But to make it quite clear that the students' role is purely advisory, the Commission adds, "We do not favour having students serve on boards of trustees or in faculty senates or in departments. We favour instead students having voting rights on selected committees or rights of formal consultation in selected areas".

The Commission calls this "another step forward" in the historic process of giving students more freedom and influence in academic life. It may indeed be enough to satisfy the wishes of the majority of American students, at least as these were in 1969, but one has doubts. It is minorities rather than majorities which tend to set the pace and one wonders whether the Commission is wise to ignore the 40 per cent who wanted a share in decision-making. Certainly experience in most European countries would suggest this; there will be many academics and others who will share the Commission's conservatism but they are already well behind the tide of development.

Coping with emergencies

The Commission is acutely conscious that the traditional continuity and consensus have disappeared from academic life and that to the old normal channels of discussion have been added the new "normal channels of confrontation"; the mechanisms of governance in the university have often not been equal to the situation. Here the Commission has in mind the unrest which appeared during the 1960's and reached its peak after the deaths of students at Kent State and Jackson Universities in the Spring of 1970, and which it had examined in some detail in the report *Dissent and disruption* (June 1971).

This title indicates the main point the Commission makes, the distinction between "dissent", the expressing of grievances or the desire for change within the limits of the democratic process, and "disruption", which is interference based on coercion or violence. Dissent is essential to democracy and to higher education, it generates, propagates and evaluates new ideas and new practices and should be protected in the university as in society. Disruption on the other hand is hostile to the university and to democratic society; it is to be morally condemned and resisted, if necessary by calling in the law.

How, asks the Commission, can academic institutions reform themselves "to discourage disruption, protect dissent and better serve students and society"? The answer is threefold:

— The adoption of a bill of rights and responsibilities for all members of the campus.

— Consultation and contingency planning for emergencies.

— Fair, equitable and effective procedures to handle violations of the rules.

(4) *The open door colleges*, June 1970.
(5) *More effective use of resources*, June 1972.
(6) *Reform on campus*, June 1972.

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The report incorporates a draft (7) of general principles which treats rights and responsibilities together. It distinguishes those which all members of the university have as citizens, e.g. freedom of speech, assembly and association; those which members have as part of an educational institution, e.g. freedom to learn, teach, research and publish, to study controversial opinions with tolerance for others; and those rights and responsibilities which the institution itself has, e.g. to provide opportunities for discussion, to refrain from taking a position in politics except with regard to its own and its members' interests.

Though there are some elements in the American situation — the size of some universities, the higher level of violence in society generally, the relatively poor reputation of the police — which make this formulation by the Commission particularly apposite, the problems facing many European universities from time to time have been just as acute. The Commission's thoughtful and reasoned analysis and proposals would therefore appear to be valuable on this side of the Atlantic too. Whether it is appropriate to have the rights and duties embodied in a formal document or not, there is little in the Commission's draft which is unacceptable. The need to spell out precisely what is to be interpreted as disruption, what the penalties will be and what disciplinary procedures are to be followed would seem to be just as great in Europe as in the US.

INTERNAL REFORM

The Commission is convinced that there is need for considerable change in what American higher education offers its students. Universities are inherently conservative, and usually rightly so, but the situation has changed so much with new types of students, new student interests, new knowledge, new labour market conditions and social needs, that reform is certainly necessary. The 1969 survey of student opinion had shown that there was considerable dissatisfaction with what the institutions offered, dissatisfaction which had nothing to do with "student unrest".

Here we can indicate only very briefly some of the changes the Commission would like to see; they are set out mainly in two reports, *Less time more options* (January 1971) and *Reform on campus* (June 1972), the former dealing mainly with structures, the latter with content.

Degree structures: A wide difference exists between the traditional pattern of university courses and qualifications in the United States and that in the European countries other than the UK. In the US it is the Bachelor's degree after four years and the Doctorate after a further four with a wide range of Masters' degrees between the two. The Commission finds this pattern unsatisfactory for modern students, who are better equipped on entry, not just because secondary schools have improved but because television, travel and other external experiences have not only broadened their knowledge but made them unwilling to tolerate the paternalism of college life for such long periods. The Commission's main objective is to introduce more steps into the pattern so that at convenient points students could if they wished, break their courses with a qualification which will enable them either to take up a career or to return to further study later. In a series of recommendations the Commission adopts the principle of having a degree at not longer than two year intervals — i.e. on the present basis, an Associate degree (AA) after two years, a Bachelor's degree (BA) after four years, a Master of Philosophy (MPhil) after six and the Doctorate (PhD) after eight. It also suggests a reduction of the overall length of study from eight years to six and the introduction of a new type of Doctorate (the Doctor of Arts) specially orientated towards teaching rather than research.

Though this alternative pattern is not suitable for Europe, the objectives which it embodies are appearing also in most of our countries. Action is being taken, though somewhat spasmodically, to meet the conviction that traditional systems are not attuned to the greater diversity of needs of a rapidly expanding student body (8). In Germany and Austria there are the Diplom and the Magister; in France the maîtrise and three levels of Doctorate and now the Diplôme d'études universitaires générales, paralleled by the Diploma of Higher Education in the UK; in Italy, the Diploma and the Doctorate as well as the traditional laurea. These changes give striking indication that beneath the different traditional patterns there are currents which reflect deeper social factors. The fundamental point which emerges is the need for flexibility.

"A broad learning experience": The Commission complains that the liberal or general education which used to be the hallmark of the American college has been abandoned in favour of "elective"

(7) *Dissent and disruption*, p. 38-41.

(8) Well documented in *Short cycle higher education: a search for identity*, OECD, 1973.

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subjects which enable students to structure their own courses. This in practice leaves the students groping and in the view of the Commission amounts to an abandonment by the teaching staff of their proper concern for undergraduate education. Though the Commission deplores this, it does not suggest a return to the old system. What is needed is a "broad learning experience", i.e. "a chance to comprehend some major aspect of world cultures or human thought", with emphasis on process rather than content — "on cultivation of curiosity, on development of critical ability, on wider perspectives on self and on cultures, on ways to approach knowledge".

There is much that is admirable in this concept both in its inter-disciplinarity and in its emphasis on the approach to knowledge rather than the mastery of it. Experiments in this direction are not unknown in Europe, particularly in some of the new universities in several countries. Experience has shown that there are difficulties but we, like the Carnegie Commission, might hope for more innovation in this direction.

The relevant curriculum: The Commission believes that courses should "relate directly to actual personal interests of students and to current social problems", and it recommends that to ensure this greater relevance, students should be voting members of curriculum committees or be given some other forum for the expression of their opinions.

Though it is strongly resisted by some academics who believe that the search for a spurious relevance is a threat to true academic standards, the trend in Europe is set strongly in the same direction. For most students, regrettable or not, it means either attention to contemporary social and political issues or more materialistically, training for a job. The failure of university study to match one or other of these objectives underlies much of the dissatisfaction expressed by students in Europe as in North America.

Teaching: Except in preparation for the Doctorate where research training is of prime importance, "a greater emphasis on the prestige of the art of teaching is both possible and desirable". How this is to be achieved is a matter of concern: the scrutiny of syllabuses and observing teachers at work are two "standard" methods but beyond these the Commission makes six suggestions for improvement. They are:

— student assessment of their teachers' performance

— differential assignment of teaching loads

— higher pay for superior teachers

— new degrees orientated towards teaching

— more awards to honour outstanding teachers

— more research into approaches to teaching.

This is a thorny problem found in all countries. The main difficulty seems to be that though there are accepted if somewhat crude yardsticks for measuring research achievement, there are no obvious means of determining what is good teaching. One thing however is clear; there is a deplorable lack of training for teachers in higher education. Some efforts are being made in a number of countries but they are still woefully inadequate.

Counselling. The Commission noted from its 1969 survey that students wanted more personal contact with the academic staff and more advice and guidance and attributed this to a number of different factors — more first generation students, greater financial need, the greater range of options open to choice, more personal problems but less support from the family and from other traditional bodies such as the churches. The Commission distinguishes four kinds of advice that students may need — academic, financial, vocational, personal. By and large, it considers that advising is not a well-performed part of higher education and though "perplexed as to how it can be improved", suggests that it should be a recognised part of the role of the academic staff, that there should also be well trained and carefully selected professional counsellors and that in each institution there should be a single central point of responsibility for the counselling services.

This question recurs many times in the Carnegie reports, in relation to pupils at school who are contemplating entry into higher education, to first year students choosing their courses and to older students considering employment. It is a matter of increasing concern in the European countries too; considerable progress has been made in relation to vocational counselling but the academic and personal services to students are still in their infancy and far below the standards which are needed.

Educational technology. To this subject the Commission has again devoted a whole report — *The fourth revolution* (June 1972). It has great faith in the contribution which the new technology can

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make to higher education, partly because of the valuable interest it has aroused in learning theory and its applications, partly because it will enable students to play a more active role in their own learning and will provide greater flexibility in the time, place and method of study. The Commission reviews the various new media from language laboratories to computer-assisted instruction, the use of all of which is widespread, though still uneven and "shallow". It attaches greater importance to the library as the centre of a unified "informational — instructional resource" and advocates the establishment of regional "Co-operative learning technology Centres" for research and development in the new media. It presses for much greater commitment and co-operation from universities and colleges but thinks that the major use is likely to be in the non-traditional fields rather than in the full-time institutions. It recognises that initial costs will be high (though it is not very successful at establishing what these costs will be) but is confident that educational technology will yield savings "as it becomes more widely used and reduces the need for live instruction. It may indeed provide the best means available to us for solving the difficult problem of continuing to educate growing numbers of students of all ages within a budget the American people can afford".

One can only hope that this confidence is not misplaced. There is immense interest in many European countries and a general acceptance of the educational benefits which could flow from educational technology. Some experimental work is developing, for instance at a number of UK universities, at München and Tübingen in Germany, at the new University of Klagenfurt in Austria. But the financial costs are clearly very high, not just of the machines (the "hardware") but of the amount of skilled time and effort which is needed to produce suitable programmes (the "software"). One wishes that the Commission could have been more informative and reassuring on this aspect.

MORE EFFECTIVE USE OF RESOURCES

When the Carnegie Commission was appointed in 1967, its principal remit was to consider the financing of higher education and though under pressure of events it widened its concern to include many other aspects, finance remained a major consideration. At that time and indeed until 1972, the expectation was that the demand for higher education would continue to expand strongly and that increasing difficulty would be found in obtaining the necessary funds from government. It was vital therefore to ensure that the resources which could reasonably be expected were used as economically as possible. The ways and means of adjusting to this situation, so different from the expansive days of the 1960's, was the subject of another of the reports. *The more effective use of resources* (June 1972).

It is true that by the time the Commission came to draft its final report, published in October 1973, the situation had drastically changed. Enrolments were well below the expected level which from one point of view eased the situation but what was much more serious, the funds made available as reflected in the cost per student were much lower than the Commission had assumed and so low as to endanger the quality of the education provided. The Commission's primary interest therefore switched from exhorting the institutions to be economical to warning the federal and state governments of the dangers of parsimony.

It is nonetheless of interest to examine how the Commission thought that economies might reasonably be made. The situation in most European countries is analogous to what the Commission assumed in 1972 the American scene would be — continued pressure of demand and legitimate difficulties of financing it. The measures suggested fall into two groups — reducing the number of years a student spends in college and reducing the cost per student.

Length of courses: As has already been noted, the Commission was of the opinion that the four years needed for a first degree and for a Doctorate could in each case be reduced to three; it also thought that by introducing intermediate stages, particularly the Associate degree after two years, some students would be content to leave college earlier. This is certainly of interest in Europe; it is presumed that the introduction of shorter courses in such countries as Germany and Austria has been motivated at least in part by financial considerations. It is generally admitted that the stay of some students at university is excessively long.

Wastage and retention rates: Another concern of the Carnegie Commission which recurs frequently in the reports is what it calls the "unwilling students" who are at college not so much at their own desire as because of parental or peer-group pressures. The 1969 survey indicated that 10 per cent of students could be so described while a further 10 to 15 per cent were unenthusiastic. The optimum use of resources would imply that these

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students should be persuaded to leave even though this would increase the "wastage rate". On the other hand true economy demands that the able and motivated students who at present leave prematurely should be persuaded and enabled to complete their courses.

The question of wastage/retention rates is far from simple but it would seem to be a valid argument on this side of the Atlantic as in the US for a much improved counselling service.

Utilisation of staff time: Staff salaries are the most expensive single item of expenditure, accounting for up to two-thirds of the cost of instruction. In considering the optimum use of resources, it is therefore necessary to consider such matters as the student-staff ratio, the size of the teaching group, the amount of time spent by academic staff on their various activities, particularly those such as consultancy which may take them off the campus. The Commission discusses these rather delicate questions and makes two recommendations — one which says that some increase in the number of students per teacher could be accepted without loss of quality and one more tactful to the effect that academic staff themselves should be involved "in developing policies directed towards achieving appropriate and equitable teaching loads" and "establishing standards relating to a reasonable maximum amount of consulting activities".

Both the points mentioned are sensitive ones in Europe too. In view of the very wide variations which appear to exist between and even within countries, it is not self evident that present standards and practices are the optimum. It would certainly seem to be a matter deserving of careful investigation.

Budgets: The Commission deals at some length with the question of budgetary flexibility. Much of what it has to say assumes a degree of institutional discretion which does not exist in most European countries even though there have been some moves in that direction, for instance in France under the "loi d'orientation". Some of the proposals would seem highly controversial even in the US — for instance, that it should be possible to carry over from year to year "significant proportions of unspent balances" or that capital and recurrent budgets should be interchangeable. One striking suggestion which seems deserving of more detailed examination is that within an institution, all allocations of space and expensive equipment should be made on a rental basis, which would in the Commission's view encourage economic use, equitable allocation and the realistic costing of, for instance, research grants and contracts.

ALTERNATIVES TO COLLEGE

One of the most interesting and, at least from the American point of view, the most radical of the Commission's reports is their last special one, entitled *Toward a learning society: alternative channels to life and work* (October 1973).

Quite early in its deliberations the Commission was convinced that the goal of "universal higher education" did not mean that everybody should enter college. Not all school leavers were sufficiently mature, well-informed or motivated to know what they wanted to do but many of them were pressured into college by their parents, their teachers or their peers and the risk was that with the expansion of higher educational opportunities, the number of these unwilling students would increase. From this situation there followed two lines of thought:

— the abandonment of the assumption that education is an unbroken sequence — primary, secondary, higher;

— the encouragement of alternatives to the traditional formal higher education tied to an institution.

As early as January 1971 in its report *Less time more options* the Commission said that it favoured "more opportunities in lieu of formal college and more stages at which college going students can change direction, stop out to obtain a non-college experience and drop out with formal recognition for work accomplished". It made a number of recommendations based on the assumption of a break between secondary and higher education, the most striking of which is:

> "That all persons, after high school graduation, have two years of post-secondary education placed 'in the bank' for them to be withdrawn at any time in their lives when it best suits them."

The concept which underlay these recommendations was as yet embryonic and it is fascinating to trace its development as the Commission pursued its investigations — in *New students and new places* (October 1971), in which it considers more flexible patterns of participation in higher education; in *The fourth revolution* (June 1972), dealing

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with the vastly increased potential of educational technology; in *The campus and the city* dealing with the special needs of the urban population and its proposal for "learning pavilions", devoted to the educational needs of adults.

By the time its last report was written, the Commission had examined both the very considerable educational provision which already existed in the US outside the recognised colleges and universities and the ideas which were developing and indeed to some extent being put into practice in Europe, conceptually in the international organisations — UNESCO, Council of Europe, OECD, ILO and practically through, for instance, the Open University in the United Kingdom and the group of laws passed by the French Assemblée Nationale in July 1971.

This last report of the Commission, *Toward a learning society*, is therefore notable for first, a masterly analysis of non-college post-secondary educational provision in the US and second, the complete conversion of the Commission to the philosophy of "education permanente".

It might appear that we in Europe have nothing to learn from this report, but it is in fact powerful addition to the literature on the subject; the European countries are after all only at the beginning of the development of recurrent education.

CONCLUSION

It has been possible in this paper only to touch on some of the subjects discussed by the Carnegie Commission which would appear to be of concern also in at least some of the countries of Western Europe. No attempt has been made to review the whole scope of the Commission's work; its own final report, *Priorities for action*, itself gives a clear conspectus of the whole field. Nor have we attempted to pass judgement on the Commission's attitudes and interpretations or to assess its impact on American higher education which was the object of its concern; that its recommendations have had effect on educational policy at the federal and state level is evident enough but that is not our concern. By any standards, however, the achievements of the Commission are of great significance. In sheer volume of output, its work is impressive; quite apart from its own reports and recommendations, it has provided through its own surveys and through the research studies it commissioned, a rich world of valuable material which will be the happy hunting ground of analysts and investigators for a long time to come. The thoroughness of the preparation, the simplicity and directness of the recommendations and the conscientious search for answers to complex problems are characteristics which will ensure a high and lasting reputation, such as has been enjoyed hitherto in Europe only by the Robbins Committee's report of 1963.